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# Some Aspects
OF
# INFLAMMATION AND INFECTION.*

*A Course of Four Lectures delivered for the University of London at Guy's Hospital on May 20th, 27th, 31st, and June 3rd, 1927,*

BY E. H. KETTLE, M.D., B.S., M.R.C.P. LOND.,
PROFESSOR OF PATHOLOGY AND BACTERIOLOGY IN THE UNIVERSITY OF WALES.

## LECTURES I. AND II.

I PROPOSE to discuss in this short course of lectures certain aspects of inflammation and infection which scarcely seem to have received of recent years the attention due to their theoretical and practical importance. I am encouraged to do this because, as I understand them, these lectures have nothing to do with examinations or degrees and form no part of a prescribed course of study. They are, as it were, luxury entertainments, and I do not feel that in delivering them it is incumbent upon me to restrict myself to orthodox teaching. A good deal of what I have to say is based on fact, but much is purely speculation, and not to be accepted without close scrutiny.

Inflammation is one of the most hackneyed and well-worn subjects in the whole of pathology, yet if we accept the definition of inflammation as "the reaction of irritated and damaged tissues which still retain vitality," we must, I think, admit that our ignorance of the inflammatory process is greater than our knowledge. Similarly, though we are all familiar with the process of infection in a rough and ready way, it cannot be said that our knowledge is sufficiently great to enable us to cope successfully with the microbic diseases. The reason is not far to seek. It is not because the microbic diseases present an insoluble problem, but because they have not been studied in the best way. Since this is the first unorthodox statement I have made, it would be as well perhaps if I made my meaning clear.

### THE DOMINANCE OF BACTERIOLOGY.

The last 30 or 40 years have witnessed a subtle alteration in our conceptions of disease, which has come about so gradually as almost to have escaped notice. The work of the great clinicians, among whom this school is proud to remember Bright, Addison, Hodgkin, Wilks, and Moxon, linked certain morbid symptoms with definite morbid anatomical lesions; Virchow and his followers traced these lesions to the actual constituents of the tissues, the cells; the study of disease became systematised and defect of function became correlated with defect of structure. Exactly how the anatomical and histological lesions upon which the illness of the patient depended were brought about was not recognised; indeed, in many forms of illness it was not possible to distinguish specific lesions. Nevertheless, it was believed in those not very distant days that disease meant some definite structural alteration in the tissues of the body. The actual cause of the change in the tissues was, as I have said, unknown, though for centuries medical opinion had coquetted with the doctrine of contagium vivum. Writing in 1546, Fallopius says:—

> "Every contagious disease spreads itself throughout the whole infected substance. Thus, in phthisis, this force of contagion is conveyed by the vapour which comes from the lungs. This vapour contains certain minute corpuscles of the blood which issue forth with the breath, and are spread by the circumambient air. So they are attracted to the lungs of another, and if they then reach a suitable soil they infect it and communicate the disease."

The belief in the external agent was formally established by the work of Pasteur, Koch, and the great bacteriologists who followed them, and from that day to this attention has become more and more focused on the parasite and less and less on the host. It is hardly to be wondered at if we have a little lost our heads over microbes. The isolation of a pathogenic micro-organism in pure culture from a patient and the reproduction of the disease in an experimental animal with this isolated organism forms a fascinating piece of work, but we cannot get away from the fact that a pathogenic organism can only be pathogenic if it has a host to be pathogenic in or on. It is obviously true that if there were no tubercle bacillus there would be no consumption; on the other hand, in the absence of a suitable host, no tubercle bacillus can fulfil its destiny. Furthermore, it is possible to bring the tubercle bacillus into intimate contact with a suitable host without producing tuberculosis.

### *The Reaction of the Host.*

Without belittling the importance of bacteriology, it must surely be admitted that in any infectious process the microbe is only part of the story, and not the most important part either. It is the reaction of the host to the presence of the microbe which constitutes the condition we have to study, and though regarded as an exercise in the science of botany the intensive study of the tubercle bacillus has great merit, it will never solve the problem of tuberculosis. But for the last 30 years we have been steadily moving away from our proper objective. For example, it is extremely difficult to explain why the meningococcus, which is often enough a normal inhabitant of the perfectly healthy person's nasopharynx, should be able to cause meningitis; it is, on the other hand, fairly easy to grow the meningococcus outside the body and to study its biological properties. Hence, whilst the pathologist remains ignorant about the essential cause of cerebro-spinal meningitis, the bacteriologist can tell us all that any reasonable man can want to know about the meningococcus itself. Similarly, while ignorant of the essential pathology of pneumonia, we devote ourselves to the typing of the pneumococci. It is bad enough to shirk the real problem for the easier task, but as a matter of fact our devotion to bacteriology has really increased our difficulties. In the early days of immunology, when it seemed that the promised land was really in sight, there was every encouragement to identify shades of difference in superficially similar microbes, for antigenic properties are highly specific. But it would appear that many of these differences are of little practical moment. There are four recognised types of the tetanus bacillus, for example, and many more types of virulent diphtheria bacilli, but all tetanus bacilli produce the same toxin, which is neutralised by a single antitoxin, and the same applies to the diphtheria bacillus. For the present, I think, we might be satisfied with a simpler bacteriology in medicine, and return to the real problem. Inasmuch as the pathogenic micro-organisms produce definite lesions in the body, and are only of importance because they do this, would it not be possible to classify them according to the lesions they cause, disregarding the minor variations they exhibit in morphology and biological properties? It would, of course, be a rough and ready classification, and it would break down from time to time, as all classifications do, but it would at least have the virtue of focusing our attention on the really important thing, the disease. If the science of bacteriology is to achieve the great position as a science which we desire for it, it must extend its boundaries. It must not remain shackled to medicine; and, as a corollary to this, pathology must emerge from the dominance of bacteriology. Among other things, it is to the possibility of such a simplified pathological bacteriology that I wish to draw attention in these lectures.

### THE PROCESS OF INFLAMMATION.

The process of inflammation is an extremely complex one and it varies in detail with the agent which calls it forth. In some types these variations are so pronounced that the reaction is clearly specific

* All the lesions referred to were illustrated by lantern slides.

and easily recognisable as due to some special agent. Others have so many features in common that it is only with great difficulty that one type can be distinguished from another, and before we can hope to analyse the mass of lesions with which we are confronted, it is necessary to appreciate what are the basal features of the process. In every text-book of pathology chapters are devoted to inflammation in general and I do not propose to cover the ground again at all formally, nor to enter into such sterile controversies as to whether repair should be included as part of the process, and whether the name should be reserved for purely local reactions. It is useful to recognise four inflammatory stages: the initial injury, the immediate vascular reaction, the exudation, and the stage of repair. These stages, of course, pass insensibly one into the other and they may be, and frequently are, coexistent; on the other hand, they may vary considerably in intensity and are at times so slight and transient as scarcely to be recognisable. The actual initiation of the process may be due to innumerable causes; simple trauma, metabolic products, products of cell disintegration, chemical and physical agents, and micro-organisms may all lead to a chain of recognisable reactions. But exactly how any one of these agents acts is a matter difficult to determine; it is, indeed, the great problem of infection. It is rarely possible even to be certain that a single cause is operative at any one time; the majority of inflammatory reactions are due to or are aggravated by more than one cause. Bacterial infections, for example, are accompanied in the earliest stages by cell destruction, and the course of the reaction is profoundly modified thereby. There is ample evidence to show that the simple presence of an organism, though it must necessarily be followed by an inflammatory reaction, however mild and transient, need not give rise to clinical infection; but infection occurs, probably with much greater frequency than we are aware, when the process is modified by another factor favourable to the organism. The carrier problem is explicable only in this way, as is also auto-infection. The importance of accessory factors will become clear when we have occasion to discuss experimental infection.

*The Vascular Changes.*

The cardinal signs of inflammation, redness, swelling, and heat, are so obviously associated with local alterations in the blood-supply of the part affected that it is little to be wondered at if the vascular changes in inflammation have occupied a dominant place in pathological teaching. Though, as Prof. William Bulloch has reminded us, to two Englishmen, Augustus Volnay Waller and William Addison, belongs the credit of having first described what happens in the blood-vessel of inflamed tissue, it is from the classical work of Cohnheim that our knowledge of this aspect of inflammation is derived. The sequence of changes as they occur in semi-transparent tissues such as the tongue or the mesentery of the frog have been described by him for all time, and it behoves all students of pathology to repeat at least once in their lives his observations. By no other method can the dilatation of the vessels, the primary acceleration and later retardation of the blood flow, the margination and emigration of the leucocytes, and the final stagnation of the current, be appreciated so strikingly. But having once performed this dramatic experiment, the student may revert with more profit to ordinary fixed and stained histological material.

For Cohnheim the whole story of inflammation could be read in the blood-vessels. He writes: "inflammation is the expression and consequence of a molecular alteration in the vessel walls"; and so great was the weight of his authority that for years his teaching was widely accepted. There has later been a tendency for the pendulum to swing rather too far in the other direction. We know that the vascular changes are not the essential feature in inflammation. The classical researches of Metchnikoff and his school established the fundamental nature of the cellular reaction in the lower animals. In the higher animals inflammation may occur in non-vascular tissues, and even in tissues with a rich circulation the vascular changes vary in degree and in time of onset. Krogh, for example, has drawn attention to the characteristic lag in the vascular reactions in inflammation brought about by light and by abrin, and there can be no doubt that in many inflammations tissue changes are in progress before any alteration occurs in the blood-vessels. Nevertheless, the vascular reactions on which depends the exudation of fluids and cells are highly important in modifying the inflammatory process, and, as I shall hope to show, the specific nature of the response to many injurious agents is determined by the changes occurring in the vessels of the part. As to the mechanism of the vascular dilatation, the exudation of fluid, and the alteration in the rate of blood flow, there is much yet to be explained, though of recent years a good deal of light has been thrown on the subject. From the descriptions in many text-books one might form the opinion that the flushing of the inflamed part with blood and the outpouring of large quantities of lymph were invariably beneficial processes, were, in fact, intelligent responses on the part of the tissues of the organism. As a matter of fact, they are nothing of the kind. They do not depend at all on nervous influences, but are local reactions to local injuries. They are, as Cohnheim said, manifestations of a molecular alteration in the vessel wall. From the work of Krogh and his colleagues, we know that the capillaries are actively contractile tubes, which respond by dilatation or contraction to different stimuli. Also, we know that the passage of fluid from the capillaries is greatly increased when they are dilated. The dilatation of the arterioles, the capillaries, and the veins is due to the paralysis of the contractile elements of their walls, and the degree of engorgement in inflammation depends upon the nature of the agent producing the inflammation, its concentration, and its diffusibility. It is interesting and important to note that products of protein degradation are capable of producing vaso-dilatation, for this may explain the delayed engorgement occurring in certain reactions, and it enables us to appreciate how multiple factors may be concerned in an inflammatory process. The determination of leucocytes to the part is nearly always beneficial, especially in the microbic infections, but even this expression of activity may be ill-advised, for the presence of phagocytes may not only determine an infection, but may also contribute to its generalisation. It has been believed, for example, that the development of tetanus in experimental animals after the injection of tetanus spores combined with other substances is due to an inhibition of phagocytosis. In some unpublished work carried out some years ago, Dr. W. E. Gye and I found that tetanus can develop in spite of the most remarkable accumulation of leucocytes and the most intense phagocytosis. There is in other directions plenty of evidence to show that phagocytosis by no means necessarily implies the death of the phagocytosed organism. The fluid of the exudate also acts beneficially in the majority of cases, but again I wish to insist that it is not poured out as part of an intelligent attempt to combat the infection. It is forthcoming because of certain alterations brought about in the tissues and vessels of the part by the agent which initiates the process. The intensity of the œdema and the characters of the fluid must necessarily vary with the agent in question, In anthrax, for example, the characteristic feature of the lesion is the intense inflammatory œdema. but with avirulent strains of this organism the fluid part of the exudate is diminished, whereas the cellular constituents are notably increased. Later I shall bring forward evidence to show that an inflammatory œdema artificially produced may affect an infectious process very adversely.

I shall not attempt to enter into any discussion about the types and origin of the cells of the inflammatory exudate—the literature of this subject is immense

so much so, in fact, that the main facts are in danger of becoming completely obscured by a mass of detail. There is no doubt that in the future the cellular study of inflammation will prove to be of the first importance, but much work remains to be done before we shall be able to see our way clearly. All I can do here is to indicate the more significant facts when discussing individual types of inflammation, though, in passing, I would note that the polynuclear leucocyte is not necessarily the earliest or the most important cell taking part in the reaction; the fixed connective tissue cells and the adventitial cells also play their part.

### INFLAMMATORY REACTIONS TO NON-BACTERIAL AGENTS.

Although bacteria are the most important of the agents which may initiate inflammation, so much so that in our thoughts inflammation and infection are almost synonymous terms, highly instructive reactions may be brought about by other means. It will not be possible to deal at all exhaustively with these non-bacterial reactions, but only to select especially two or three which have a direct application to the bacterial infections to be reviewed. Moreover, even in these selected examples, only general features can be dealt with, for even the mere anatomical differences in the tissues of the various experimental animals cause variations in the lesions produced.

#### *Inflammation due to* (1) *Calcium*

One of the most constant and striking of the chemical inflammations is that produced by calcium. It has been studied and clearly described by Bullock and Cramer. I have mostly used mice for the study of this reaction, but have satisfied myself that calcium inflammation in other animals is comparable to that in the mouse. When calcium chloride in quantities of 5–10 mg. or less is injected into the subcutaneous tissues of mice an inflammatory reaction is noticeable in a few hours and fully developed in 24. Its most striking feature is an intense jelly-like œdema which extends widely and is accompanied by considerable congestion. In time the œdema disappears, though it may last for three days or more, but the congestion persists for considerably longer. Healing takes place with the formation of vascular adhesions between the skin and the thoracic and abdominal walls. Microscopically the lesion shows, in addition to the œdema, intense dilatation of the blood-vessels with occasional hæmorrhages, and a considerable exudation of leucocytes. Hyaline thrombi are often found in the dilated vessels, possibly as the result of the widespread damage to the endothelium of blood and lymph vessels. Other evidence of tissue destruction is seen in the degeneration and even the necrosis of the muscle-fibres in the neighbourhood, and the skin is sometimes ulcerated. The actual degree of tissue destruction, however, is scarcely appreciated till it is rendered more obvious by the subsequent process of repair. The characteristic features of the reaction, then, are diffuse necrosis of tissue, varying with the intensity of the dose, pronounced congestion and an abundant inflammatory exudate of which the fluid constituent is particularly prominent. In fact, the calcium reaction is apparently chiefly due to derangements of the local circulation.

#### (2) *Silica.*

An even more striking inflammatory process is that produced by silica. If this substance is injected into the subcutaneous tissues of mice a sequence of changes occurs which progresses for several days. Gye and Purdy have shown that silica is primarily an endothelial poison, but in concentrated doses of 5–10 mg. the vascular effect is not nearly as pronounced as with calcium. The lesion is primarily a destructive one, consisting of a coagulation necrosis of the tissue and the serum poured into it. Within a few hours of the injection it can be recognised as a zone of necrosis, quite acellular, except for a few leucocytes at the periphery. Beyond it for some distance the capillaries are dilated and engorged and present active margination and emigration of leucocytes. These polymorph leucocytes surround the necrotic zone, forming a dense band of cells which become necrosed themselves. Within three days a lesion is produced, so characteristic as to be specific. It consists of a central necrotic area surrounded by a zone of leucocytes, most of which are themselves undergoing destruction. Outside this there is a secondary area of necrosis, which is bounded by granulation tissue. In course of time the lesion inspissates and becomes invaded by macrophages, and the final picture is that of an organising inflammatory fibrosis.

The extent of the silica lesion naturally depends on the dose administered, but it always tends to be strictly localised in contrast to the widespread effect of the calcium lesion. The reaction brought about by different forms of silicon, is, as I shall hope to show, a matter of considerable practical importance.

#### (3) *Turpentine.*

Turpentine causes a local inflammation which appears to combine to some extent the features of the calcium and the silica lesions. In addition to a pronounced vascular reaction, it causes tissue necrosis and a most intense accumulation of leucocytes. The abscess then formed spreads by the death and solution of the leucocytes and the determination of fresh cells to the part. The removal of the irritant must be a slow process, for tissue destruction continues for a considerable time, and the extent of the lesion, when compared with that produced by calcium and silica, is out of all proportion to the amount of the poison administered. Healing is naturally slow, and when it is finally achieved, is accompanied by a pronounced degree of scarring.

#### (4) *Inert and Insoluble Substances.*

Certain inert and insoluble substances also produce easily recognisable lesions in the tissues. A feature common to most of them is the foreign body giant cell, a syncytial mass which surrounds the foreign substance. All who have had much experience of surgical pathology must have seen many instances of this reaction around ligatures embedded in the tissues. Cholesterin, as Matthew Stewart has shown, is another common cause of the foreign body type of reaction, and rather similar lesions may be produced experimentally by aluminium oxide.

### INFLAMMATORY REACTIONS PRODUCED BY MICRO-ORGANISMS.

#### *Tissue Predilections.*

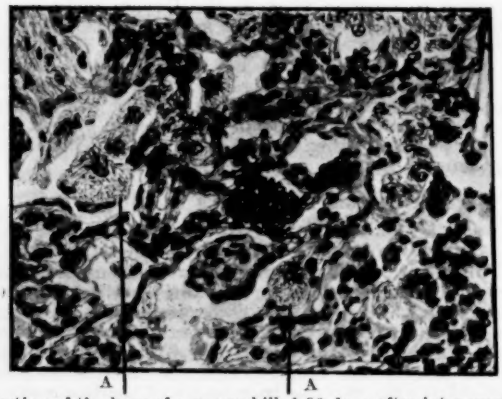
Turning now to the inflammatory reactions produced by micro-organisms, the partiality of certain organisms for certain tissues is well recognised. The staphylococcus is the common infecting organism in the acute lesions of the skin and in osteomyelites; the pneumococcus affects the lung; Pfeiffer's bacillus attacks particularly the mucous membrane of the respiratory passages, as also does the diphtheria bacillus. One of the most striking examples is the distribution of the three main types of meningitis—the streptococcal and pneumococcal, the meningococcal, and the tuberculous. Equally remarkable is the localisation of the typhoid bacillus in the lymph follicles of the intestine. And many other examples could be quoted. Sometimes, it is true, other factors than those specific to the organism determine the localisation of an infection. Gas gangrene, for example, is a disease of muscle because it is only in muscles that the organisms are able, as a rule, to develop, not because they prefer muscles to other tissues; the localisation of the disease is determined by mechanical factors. Again, the atypical distribution of organisms in the body is quite common; the gonococcus and Pfeiffer's bacillus may cause ulcerative endocarditis, and the typhoid bacillus periostitis. But, broadly speaking, the rule holds good; there is a definite determination of certain organisms to certain tissues. It is possible to talk of the organisms of osteomyelitis, of anterior and

posterior basal meningitis, of fibrinous pneumonia, of membranous croup, and so forth. And—and this is the important point—nine times out of ten we shall be talking of a specific organism.

*Specific Histological Lesions.*

If it is possible to classify organisms in this rough-and-ready way along purely anatomical lines, it is much easier to do so by resorting to histology. The tubercle bacillus characteristically attacks the lungs, and so well recognised are the pulmonary lesions it produces that there is seldom any difficulty in distinguishing them from those brought about by other organisms. But the tubercle bacillus also attacks the skin, the bones and joints, the alimentary canal, lymphadenoid tissue, the genito-urinary system, and serous membranes. Indeed, so catholic are its tastes that it defeats any attempt to force its lesions into an anatomical classification. Microscopically, however, the lesions it produces in the tissues are almost pathognomonic. They vary, of course, between cell destruction on the one hand and cell proliferation on the other, but the fundamental tissue changes brought about by the tubercle bacillus are so characteristic that the presence of the organism can nearly always be diagnosed from a microscopic examination of the lesion. Further, it does not matter what type of tubercle bacillus it is; the essential lesions are the same whether they are caused by the bovine or the human type of organism. One may even go further and recognise a type of tissue reaction brought about by the pathogenic members of the great acid-fast group of bacilli, for the lesions of leprosy, though easily distinguishable, are essentially very much like those of tuberculosis. Such differences as exist seem to be due much more to a greater virulence of the tubercle bacillus than to fundamental differences between the organisms. An even more striking illustration of this

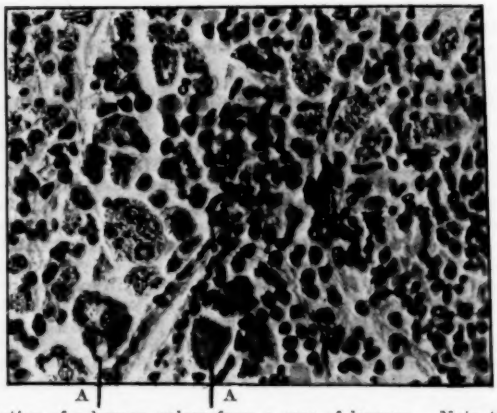
FIG. 1.




Section of the lung of a mouse killed 90 days after intravenous inoculation with human tubercle bacilli. Note the persistence of bacilli in the macrophages (A) and the absence of necrosis or inflammatory reaction.

conception is seen in the organisms pathogenic in the intestinal tract. Morphologically the various Gram-negative non-lactose fermenting bacilli are very much alike, and though some of them are easily distinguished from one another by cultural tests, attempts at a still finer differentiation have landed us in rather a difficult position. If, however, we resort to a pathological diagnosis, it becomes apparent that we have to deal with two main groups, the typhoid and the dysenteric. It is, I think, extremely important that organisms so closely allied morphologically and culturally as the typhoid and the dysentery bacilli should produce such different lesions. It is surely more significant that organisms so closely resembling each other should cause diametrically opposite reactions in the tissues of the host than that organisms giving rise to essentially the same changes in the intestine should exhibit minor serological and cultural differences. I do not wish to minimise in any way the importance of bacteriological observations in these diseases. Inasmuch as most of the patients survive their infections, and their lesions never come under observation at all, accurate diagnoses can only be made with the help of the

FIG. 2.




Section of a human spleen from a case of leprosy. Note the presence of bacilli in the macrophages (A) and the same absence of necrosis or inflammatory reaction as is seen in Fig. 1.

bacteriologist, and from the epidemiological and public health points of view an accurate bacteriological diagnosis is of the first importance. But a true understanding of a disease with, it may be hoped, the development of rational methods of combating it can only be arrived at by the study of the disease process, and it is for this reason that one would be glad to see at least as much attention devoted to the lesion as is lavished upon the microbe.

LESIONS ATTRIBUTABLE TO VARIOUS ORGANISMS.

*Pyogenic Cocci.*

An exhaustive dissertation on pathological histology would be wearisome, even if justified by accurate knowledge, and I am only too well aware that my appreciation of the differences in the various bacterial inflammations is still superficial. Still less do I know what these differences may mean. Some features, however, may prove to be significant, and to these attention should be directed.

It is unfortunate from our point of view that the lesions of the pyogenic cocci, the staphylococci, and streptococci, which are responsible for such a high proportion of infections, should be so difficult to analyse. They both give rise to acute reactions characterised by the typical vascular changes and the accumulation of vast quantities of polynuclear leucocytes, and more often than not it is impossible to distinguish histologically a staphylococcal lesion from one due to a streptococcus, though the anatomical distribution of the disease may be of some guidance. For the most part the staphylococcal lesions tend to remain more localised than the streptococcal. The organisms are not distributed so diffusely through the lesion, but tend to accumulate in the centre. There is a pronounced determination of leucocytes to the affected area, and the abscess then formed tends to enlarge by the death and solution of the older cells and the peripheral accumulation of newcomers. In favourable cases the organisms die and the lesions are healed in the usual way by solution and phagocytosis of the pus and the activity of peripheral granulation tissue. The streptococcus tends to affect mucous membranes, and the lesions it produces are much more variable. As a rule the exudate contains more fluid and there is less tendency to localisation. The organisms tend to spread widely through the tissues, especially in lymphatic spaces, and the whole process

is usually more rapid. A remarkable reaction is that seen in erysipelas, when an intense infiltration of the tissues with cocci is accompanied by much fluid exudate in the looser tissue, and an accumulation of mononuclear cells rather than polynuclear leucocytes. I can say little of the numerous reactions supposed to be due to variants of the *S. viridans*, but the type of endocarditis due to streptococci has remarkable features (vide infra).

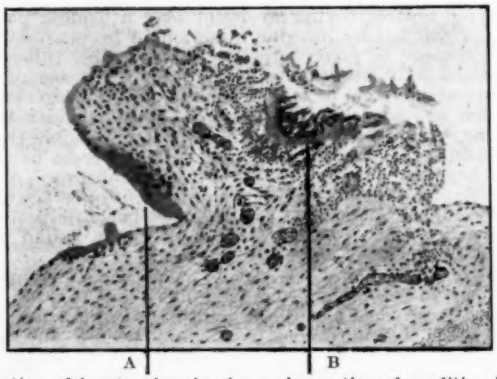
*The Pneumococcus.*

The pneumococcus gives rise to its most characteristic lesions in the lung. The macroscopic appearance of the pneumococcal pneumonia is highly distinctive, and microscopically the lesions are as easily recognisable. The vascular reaction is as pronounced as in the streptococcal and staphylococcal lesions, but the typical feature is the outpouring of an abundant fluid exudate extremely rich in coagulable protein. The names croupous and fibrinous pneumonia are, of course, an expression of this peculiarity. In the early stages of the disease the pulmonary alveoli become filled with a meshwork of fibrin in which are entangled the cells of the exudate, red blood corpuscles, polymorphs, and also mononuclear cells, and later on, although the wandering cells become a more conspicuous part of the reaction, the fibrin is always prominent. In extra pulmonary lesions the reaction may be modified, though it is always characteristic in pneumococcal infections of the serous membranes. And although a fibrinous exudate occurs in other infections, it is so particularly characteristic of the pneumococcal lesions as to place them in a distinct histological class.

*Gonococcus and Meningococcus.*

Two other micrococci, the gonococcus and the meningococcus, must be mentioned, because in their reactions phagocytosis plays such a prominent and significant part. Phagocytosis of the causative organisms by the cells of the exudate is, of course, a commonplace in many infections, but in these two

FIG. 3.



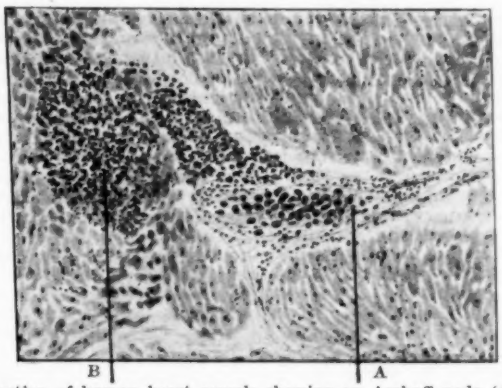

Section of heart valve showing a rheumatic endocarditis with a simple vegetation (A) and a superimposed streptococcal infection (B).

infections it is unusually obvious. In the later stages of both these diseases many of the organisms are free in the exudate, but in the early stages they are nearly all intracellular. The characteristic feature is that they are not universally distributed throughout the cells of the exudate, but are limited to occasional cells in which they occur in large numbers. It is impossible to avoid the conclusion that the organisms are actually proliferating within the bodies of the phagocytes. Phagocytosis in these diseases would appear to be less of a defensive mechanism than an aid to infection. It may explain how the meningococci pass from the throat to the meninges. And it is quite possible that the deposition of gonococci by phagocytes in the submucous tissue of the urethra may determine the chronic inflammatory changes which result in the formation of strictures.

*Diphtheria Bacillus.*

The diphtheria bacillus is not the only organism, or, indeed, the only irritant which can cause a membranous inflammation of mucous membranes, but the reactions it calls forth are highly characteristic and, in established lesions, can scarcely be mistaken for

FIG. 4.




Section of human heart muscle showing an Aschoff node (A), together with an acute abscess (B). From the case of subacute infective endocarditis superimposed on acute rheumatism shown in Fig. 3.

anything else. In the early stages of the infection there is necrosis of the cells of the covering epithelium and pronounced vascular reaction, with the outpouring of large quantities of coagulable fluid exudate. Many leucocytes appear at first, but they tend to undergo necrosis, and in the later lesions the exudate contains few cells. In the fully developed lesion the mucosa is entirely necrotic and replaced by a thick inflammatory membrane consisting of coagulated protein and containing few cells. The surface of the membrane is covered with large numbers of the bacilli, but these are quite superficial and do not penetrate into the deeper tissues. Beneath the exudate the submucosa is intensely congested, œdematous, and infiltrated with moderate numbers of leucocytes.

*Anthrax Bacillus.*

Anthrax is another infection in which the initial lesion has characteristic features depending on the type of inflammatory reaction called forth. The vascular reaction is pronounced, there is an abundant accumulation of leucocytes, and, above all, a pronounced exudate of serous fluid which passes into the epithelium and causes the typical ring of blisters. Unlike the diphtheritic or pneumococcal exudate, this fluid shows little tendency to coagulation; and fibrin formation is not a characteristic feature of the anthrax lesion. The bacilli are present in numbers throughout the lesion, and though even in the advancing zone there are plenty of leucocytes, phagocytosis is not, in my experience, a prominent feature. In the older part of the lesion, where there is much necrosis and vast numbers of leucocytes accumulate, there is, it is true, considerable phagocytosis, but it seems to have no influence on the infection, and it would appear that the intense serous exudate prevents any limitation of the bacterial growth.

*Anaerobic Bacilli.*

A group of organisms which cause highly specific lesions are the anaerobic bacilli, *B. welchii*, *B. œdematiens*, and *V. septique*, the bacilli of gas gangrene. Although at one time it was thought that these bacilli had a specific action on muscle, this does not appear to be true. These organisms thrive best in deep, penetrating wounds, and in the limbs such wounds involve muscle. Wounds of the abdominal and thoracic viscera are either fatal or receive operative treatment

from considerations other than the occurrence of gas gangrene; but were these organs of less immediate importance to the life of the individual, there is no reason to suppose that the incidence of gas gangrene would not be as high in them as in wound of muscle.

The characteristic lesion of the gas gangrene bacilli is necrosis, brought about by their toxins. The tissues affected pass through the stages of cloudy swelling to coagulation necrosis and solution with the formation of gas. The most highly organised tissues are affected first, but eventually the blood-vessels and connective tissues are also destroyed. The organisms are present in enormous numbers in the connective tissue, and do not invade the other structures, except perhaps when necrosis is far advanced. In an infected muscle they tend to remain within the limits of the epimysium, and they extend to neighbouring muscles by spreading in the subcutaneous tissue or in the deep connective tissue trabeculæ. The most striking feature of the lesion is the entire lack of any inflammatory reaction. The tissues are absolutely quiescent, and though there is some slight serous exudate, wandering cells are entirely absent. In the cutaneous and subcutaneous tissues there may be an abundant exudate of polynuclear leucocytes which are actively phagocytic, but there is nothing of this kind in the muscles or viscera. In human material I have never been able to demonstrate any differences between the reactions of these three bacilli, but J. McIntosh has published beautiful figures showing that in the guinea-pig it is possible to distinguish the infecting organism from the naked-eye appearance of the lesion.

*Streptothrix.*

As a rough and ready rule one regards as acute inflammations those in which the cellular exudate consists of polynuclear leucocytes, and chronic inflammations those in which the mononuclear elements predominate. The streptothrix infections form an interesting exception to this rule. In actinomycosis the fungus causes necrosis of tissue and an abundant exudation of polynuclear leucocytes, which surround the tangled masses of the mycelium. But instead of a large confluent abscess, such as one sees, for example, in amœbic infections of the liver, each small focus becomes surrounded by active granulation tissue, which in turn is enclosed in dense connective tissue. The foci enlarge and ramify by solution of the tissues, but destruction is always accompanied by the peripheral fibrosis, and in this way the characteristic honeycomb lesions are produced. Although the disease is extremely chronic, the mononuclear-celled reaction that is seen in tuberculosis or syphilis does not occur. And even in old foci, in which the mycelium is for the most part dead, there is complete absence of the giant cell phagocytes which might be expected.

*Typhoid and Dysentery.*

In their morphology and in their biological properties the bacilli of the typhoid and the dysentery groups are so alike that one would expect them to cause lesions of a similar nature. But, on the contrary, they differ in their effects on the tissues about as widely as they possibly can. The dysentery bacilli attack primarily the intestinal mucosa and give rise to a diphtheroid exudate with widespread ulceration and destruction of the mucous membrane. There is intense vascular reaction in the submucosa, but the condition is more or less localised to the intestine; there is no septicæmia and no involvement of the spleen. The bacilli of the typhoid group, on the other hand, affect primarily lymphadenoid tissue. The organisms become septicæmic and lesions occur in the skin and other organs, but the brunt of the infection falls on the lymphadenoid tissue of the intestine, the spleen, and the mesenteric glands. The intestinal ulcers are not due to direct involvement of the mucous membrane, but are secondary to processes occurring in the underlying lymph nodes. Again, though enteric fever is an acute infection, the polynuclear leucocyte takes no part in the inflammatory reaction; indeed, typhoid fever is one of the acute diseases in which there is a leucopenia.

*Syphilis.*

Of tuberculosis and syphilis very little need be said. Syphilis is so protean in its manifestations that it would seem to defy analysis; and, indeed, it is one of the most difficult of the infections to interpret histologically. It presents, however, certain remarkable features which are quite outstanding. The primary lesion is characterised by an enormous proliferation of the specific organism; with appropriate staining the chancre can be shown to be packed with spirochætes, which are not phagocytosed but lie free in the tissues. At the same time there is remarkably little tissue destruction, and it is, of course, notorious that unless secondary infection supervenes, the primary chancre heals with little scarring. Occasionally small foci of necrosis occur, and these are usually infiltrated with polynuclear leucocytes, but for the most part the reaction consists of a dense accumulation of mononuclear cells, lymphocytes, and plasma cells, and a proliferation of the fixed connective tissue elements. In the later stages of the disease exactly the reverse occurs. Here tissue destruction is prominent, but organisms are very difficult to demonstrate. One of the most remarkable features of syphilis is its extreme chronicity. It may persist, apparently latent, for years, producing little change except a mild fibrosis of most of the viscera which acquires importance simply because it is progressive. It is possible that many of the late manifestations of syphilis are unrecognised as such, but the characteristic fibrosis of the testicle, and the even more characteristic chronic aortitis affecting the ascending aorta, are familiar findings in the post-mortem room.

*Tuberculosis.*

The macroscopic and microscopic lesions of tuberculosis, or at any rate the more usual types, are so familiar that they need not here be described, but certain points may be stressed. The more tuberculosis is studied the more it appears to be a phagocytic disease. Once the disease is firmly established in the body diffusible toxins no doubt play a leading part, but I can hardly imagine infection to be possible in the absence of phagocytosis. Further, the tubercle bacillus may almost be said to be a disease of a particular system of cells, the mononuclear phagocytes which are now usually grouped together under the name reticulo-endothelial system. It is possible that polynuclear leucocytes may pick up tubercle bacilli as they may pick up any other foreign substance, and I have occasionally seen these cells present in very acute tuberculous lesions, but for the most part the pathogenicity of the tubercle bacillus is closely bound up with the reticulo-endothelial system.

In the more acute destructive lesions the bacilli may be present in such enormous numbers that the tissues seem to serve as a veritable culture medium, but in the more chronic lesions bacilli may be few and far between. In fact, there seems to be very often a fairly equal balance between the pathogenicity of the bacillus and the resisting powers of the tissues; a very little will turn the scale either way. And this is particularly well seen in the infections of animals which are almost immune. Tubercle bacilli introduced into the tissues of an animal such as the mouse are able to establish themselves to a certain extent, but they do this with the least possible inconvenience to the host. They are phagocytosed, and they appear to proliferate within the phagocytes, but they seem to exert little or no toxic action; the whole process suggests an almost perfect symbiosis. And in the study of tuberculosis in the mouse one cannot fail to be reminded of leprosy in the human being. Here occurs the same intense phagocytosis and bacilli are symbiotic within the phagocyte, with, especially considering the numbers of the infecting organisms, the minimum of disturbance to the host (Figs. 1 and 2). Leprosy, indeed, can scarcely be distinguished histologically

from tuberculosis as seen in the naturally immune animal. It is merely an infection by an organism of the great acid-fast group, but one of an extremely low virulence.

### THE HISTOLOGICAL LESION AS AN AID IN DETERMINING ÆTIOLOGY.

Turning for a moment to another side of the question, an interesting feature of the histological aspect of infection is the influence it has on establishing the causal agent of a disease.

#### *Acute Rheumatism.*

The ætiology of acute rheumatism, one of the most important crippling diseases, is still unknown, though from time to time many organisms have been brought forward as the cause. One of the most convincing of these was the rheumacoccus of Poynton and Paine, and at one time I was prepared to accept it partly, perhaps, because I was rather biased in its favour, but chiefly because I was not conversant with the histological lesions of rheumatism. It is now generally agreed that the Aschoff node is the essential lesion of acute rheumatism. In the myocardium it consists of a small focus situated in the interstitial connective tissue, usually in relation to a small vessel. The nodes are multiple and consist in the acute stage of aggregations of large cells of the endothelial type, some of which may be multinucleated and mononuclear wandering cells. The older lesions tend to shrink down and are eventually represented by minute foci of fibrous tissue. These Aschoff nodes are quite unlike any coccal lesion with which we are familiar. The difference between the two reactions becomes obvious when, as occasionally happens, they occur simultaneously (Figs. 3 and 4). In the case illustrated in Figs. 3 and 4 a streptococcal infection was superimposed on an acute rheumatic carditis, and histological examination revealed two distinct types of lesion. A mitral cusp showed on one side a typical rheumatic thrombus vegetation with the deeper mononuclear-celled reaction, and on the other an area of ulceration with a polynuclear-celled infiltration and numerous cocci; and a fortunate section through the wall of the left ventricle showed a characteristic Aschoff node lying in actual contact with a small acute metastatic abscess. Until an organism can be shown to be capable of causing the Aschoff lesion experimentally, we shall have to continue our search for the organism of acute rheumatism.

#### *Forms of Encephalitis.*

Another instance of the same kind is seen in certain cases of encephalitis. The histology of encephalitis lethargica is rather complicated and difficult, but it will generally be agreed that its most constant features are, first, the accumulation of mononuclear cells in the adventitia of the vessels of the affected area, forming the so-called cuff; and secondly, the absence of any glial softening in these areas. On these points alone it is possible to make a diagnosis in all but the most unusual cases. In the last few years a good deal of attention has been devoted to a form of encephalitis following, or at any rate associated with, vaccination. The number of cases of post-vaccinal encephalitis is exceedingly small in comparison with the total number of vaccinations; nevertheless we cannot afford to neglect them. It has been suggested that they are really cases of latent encephalitis lethargica which have been lightened up by the vaccination, but the lesions, though not unlike those of encephalitis lethargica, differ in these respects, at least in the only two cases I have seen. There is no perivascular cuffing and there is considerable glial softening. That the lesions are sufficiently distinct to suggest a distinct disease is the opinion of such experienced and cautious observers as Prof. H. Turnbull and Prof. J. McIntosh. One must admit that there exists a strong body of opinion opposed to this view, but many diseases have been accepted as entities on much less evidence than we have in the peculiar histological appearances of post-vaccinal encephalitis.

## RHEUMATISM IN CHILDHOOD.

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IN the course of an investigation into the relation between social conditions and acute rheumatism in children, carried out by the writer for the Medical Research Council, certain features were noted incidentally, which whilst having no direct bearing on either the causation or the prevention of the disease, and therefore not embodied in the Report,[1] are thought nevertheless to be of sufficient interest to record here.

Whilst engaged on this work under the direction of Dr. G. F. Still at the Hospital for Sick Children, Great Ormond-street, London, the writer examined, together with their entire families, 121 cases who were under treatment for rheumatism or had been some time previously; in the selection of these cases only those were taken with quite definite manifestations, nothing apart from chorea, rheumatic carditis, and rheumatic fever, acute or subacute, being accepted. All except two of the patients and 35 out of the 242 parents and 318 siblings were actually examined.

A social investigation of these families carried out by Miss Little grouped them into three classes, which were roughly as follows:—

*Class A.*—Families having a certain margin over bare necessities, the fathers earning generally up to £1 a week or more.

*Class B.*—Fathers belonging mainly to semi-skilled and the more stable unskilled workers earning £2 5*s.* to £3 10*s.* per week but having no margin for anything beyond the bare necessities of life.

*Class C.*—Families with means generally below subsistence level and, generally speaking, of the lowest social grade.

Under this grouping the families were found to be distributed as follows:—

| | | |
|---|---|---|
| Class A | .. .. .. .. | 16 families. |
| „ B | .. .. .. .. | 77 „ |
| „ C | .. .. .. .. | 28 „ |

A very similar distribution was found in the much larger series of cases investigated at the same time by workers at St. Thomas's Hospital, and it is concluded in the report that "contrary to expectation, a comparatively small proportion of rheumatic cases came from families belonging to the lowest and poorest classes." This statement is above contradiction, but does it follow therefore, as is assumed, that the "poorest class of hospital patient shows a lower incidence of rheumatism than the other two"? In a series of 100 control families from St. Thomas's Hospital the distribution was much the same into the three classes, and it would seem simply that there are fewer families amongst our London population to be grouped under "C" than under "B." Would we not get very different figures if, instead of starting with a certain number of rheumatic patients and classifying their families into social groups, we took an equal number of families from each group and then ascertained the incidence of rheumatism amongst them?

#### *Incidence of the Disease in Relation to Poverty.*

A certain amount of light might be expected here on considering the percentage of contacts found to be affected with rheumatism in the three social classes in the families of the rheumatic patients investigated; and in this connexion the St. Thomas's workers found amongst the brothers and sisters over 2 years of age of their rheumatic patients 16 per cent. in class A, 12 per cent. in class B, and only 10 per cent. in class C; very different figures, however, were arrived at from the writer's series as is shown in the following table.

This would seem to indicate that the incidence increases pari passu with poverty. That better social conditions would go a long way towards eliminating the rheumatic child is shown by the examination of nearly 2000 inmates of Poor-law residential schools

carried out by the writer for the Medical Research Council, when only 1 per cent. of the children were found to be rheumatic. This is a very low figure compared with the incidence found in the elementary schools of the education authority, which is stated variously as 2·4,[2] 4·8,[3] and 5·2,[4] and is even more striking when one considers that several of these children going to form the 1 per cent. had undoubtedly

*Incidence of Rheumatism amongst the Exposed Persons (Parents and Living Brothers and Sisters Aged 4 Years and Over).*

| Class. | Number of exposed persons. | Cases of rheumatism. | Percentage affected. |
|---|---|---|---|
| A | 83 | 5 | 6·0 |
| B | 330 | 30 | 9·0 |
| C | 109 | 13 | 11·9 |

been affected with rheumatism prior to entering the schools. Rheumatism occurring de novo in these institutions is an absolute rarity as was seen by a perusal of the sickness records. At Sidcup homes only two cases of chorea and five cases of acute rheumatism occurred in 22½ years during which time 4198 children had passed through. The schools at Anerley have only had three or four cases of rheumatic fever in 17 years out of about 4000 children, whilst 12 cases of chorea have been noted there in the last 12 years out of 2364 inmates. The medical officer of the Ongar homes gave the writer similar remarkably low figures; he could only recall three cases of chorea since 1908, when the homes were first opened, during which time he had seen 2000 children, and he could not recall a single case of acute rheumatism developing without a previous history of similar trouble prior to admission.

It is the writer's experience that the severity and general prognosis of the disease is influenced adversely by the degree of poverty, and some of the following facts concerning the original 121 patients are written partly in an attempt to bear out this contention.

*Sex.*—There were 75 females and 46 males.

*Age at Onset.*—The average age of the patient at the onset of the disease was difficult to ascertain with anything like accuracy, and was much the same in each of the three social classes, yet the figures denote a slightly earlier onset in the poorer, less cared-for children, thus:—

| Class. | Number of patients. | Average age at onset. |
|---|---|---|
| A | 16 | 8·2 years. |
| B | 77 | 7·5 ,, |
| C | 28 | 7·2 ,, |

The average age of the children at the time of investigation was 10·9 years.

*Joints.*—Just over half the total number of cases had at some time definite joint pains, whilst in 29 per cent. of the total this was associated with swelling and pyrexia.

*Carditis.*—In 81 cases (67 per cent.) the heart became definitely involved at some period of the illness; mitral endocarditis was the most commonly found lesion, being present in 68 instances; combined aortic and mitral disease was noted on four occasions, whilst pure aortic disease was met with once only. In eight cases it was thought that myocarditis was present without any valvular defect. Extensive pericarditis was present in five instances; of these one was first diagnosed at the time of the investigation, the other four presented themselves at an average of three years from the date of onset of gross involvement of the pericardium, and three were apparently quite fit without complaints and with hearts reacting well to exercise. Three of these five cases of pericarditis were from "C" families, though as stated above there were only 28 families in this class altogether.

*Throat Conditions.*—These have been very completely dealt with in the report, and the cautious comment that "complete removal of the tonsils does not appear to afford absolute protection from attack by rheumatism" would appear to be fully justified. It was not very uncommon to find perfect enucleation of the tonsils had been carried out some considerable time before the onset of symptoms, and it was also interesting to note that removal of tonsils by no means stopped the rheumatic process developing once it had laid its grip on the child, and the writer has seen hearts becoming much worse and even involved de novo following the operation of tonsillectomy.

*Chorea.*—At least one attack of chorea had occurred in 82 children (68 per cent.). One case had as many as seven distinct and separate attacks. Taking into consideration the fact that it was not possible to ascertain definitely the number of recurrences—as some patients were "always having them" or were "never free"—the average number of attacks per patient was found to be almost two, so that a child once having had chorea is fortunate if he or she does not get it again. It is interesting to compare the prognosis of children with chorea falling into class C families (bad) with those in class A (good), for whereas those coming from good families only occasionally had a second attack it was almost the rule for those from the poorest surroundings to have a recurrence and many of these were the children who were "always having it." There were 69 instances in which chorea was the chief, or indeed the only, symptom first noticed and 28 (40 per cent.) of these had developed, either at that time or subsequently, permanent heart complications. Of 30 cases of chorea which started without the slightest suspicion of cardiac involvement, 5 (17 per cent.) by the time of the investigation had developed this complication, and of 21 cases which started their choreic manifestations together with equivocal signs of heart disease—a slight enlargement perhaps or an occasional systolic bruit—such as often gives rise to considerable speculation as to the future welfare of the patient, 5 of these, nearly 25 per cent., had already developed a definite and permanent endocarditis, whilst in two others there was considerable doubt as to the integrity of the heart. There was some indication that in this respect also children in the good (A and B) families fared better than their less fortunate brothers and sisters.

It was noted that whereas the combination of heart disease with rheumatic fever was frequent, it was distinctly uncommon to get chorea either during or following an attack of acute rheumatism without first getting cardiac involvement.

*Subcutaneous Nodules.*—During the course of the disease subcutaneous nodules were present in 19 cases (15·7 per cent.); of the 19 children 17 were seen at a period averaging two and a quarter years after the first appearance of the nodules, and four of these were small under-developed children with big hearts and would probably not reach adult life, but the remaining 13 presented themselves looking fit and well with quiescent hearts and appeared as if they would grow up into fairly useful citizens.

### *Conclusions.*

(1) Rheumatism is a disease of poor people and the incidence of the disease may well be in direct relation to the degree of poverty. (2) Rheumatism is very rare amongst children of the poor classes when they are placed in the splendid environment of Poor-law homes. (3) Once attacked, the poorer the child the worse the outlook. (4) The prognosis of cases with pericarditis and subcutaneous nodules is not so bad as is generally supposed. (5) Whilst unable to point with anything like certainty to any one factor of poverty associated with rheumatism, and whilst being as yet entirely in the dark as to its real ætiology, it can be emphasised here in the words of Dr. Still that it is "by raising the standard of environment and improving the home conditions so that they approximate the well-ordered conditions found in such institutions as those in which rheumatism was found much less common—that we may hope to reduce the frequency of rheumatism in children."

*References.*—1. Medical Research Council, Special Report Series No. 114 (1927). 2. Hadfield: L.C.C. Medical Officer's Report, 1911, p. 158. 3. Williamson, O. K.: Ibid., 1911, p. 158. 4. Langmead, F. S.: Ibid., 1910, p. 135.

# ORGANISATION AND THE RHEUMATIC CHILD.

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RHEUMATISM in childhood has been known since the early nineteenth century, but it is only within recent years that the numerical extent of the disease has been ascertained and its significance appreciated. The position which now confronts us can be summarised as follows: From the statistics of 1926, 500,000 of the school-children of the country are estimated to suffer from rheumatism, 10,000 of the children of school age in London are known to be rheumatic, and the vital statistics of 1924 showed that the deaths from heart disease exceeded those from either tuberculosis or cancer.

This incidence of disease in the community has two consequences. The first are the recurring periods of ill-health and loss of education to the child. This is a feature difficult to realise and it is something of a shock to read in a recent report [1] that a quarter of the chronic ill-health of school-children of the country is estimated to be due to rheumatism. The second effect is the adult carditis resulting from the disease. The extent of this is indicated by the estimation that 60 per cent. of rheumatic children ultimately develop heart disease. These facts represent one of the many baffling problems confronting medicine to-day. It is a problem, however, which is fortunately attracting considerable attention, and the past year has seen the publication of two authoritative reports concerning it and one containing suggestions with regard to its prevention. It is the purpose of this paper to attempt to summarise the present position as regards our knowledge of the disease, and to examine the grounds upon which hope of control and of understanding may fairly be based.

### *Three Main Facts.*

If the disease be considered as a whole, three main facts become evident. The first is a marked lack of definition in the clinical outline. Only a short time ago, acute and subacute rheumatic fever, chorea, tonsillitis, and carditis were held to cover the manifestations of rheumatism in childhood. As these are well-defined conditions, the features of the disease appeared to be clear and easily recognisable. But, within recent years, it has been argued that many forms of debility, anæmia, vague muscular pains, dyspepsias, and general irritability should also be considered as of rheumatic origin. Furthermore, there is a good deal of evidence which goes to show that carditis can result equally from these as from the more definite forms of the disease, although this is a point upon which unequivocal proof is still needed.

The second fact is that the greater significance of rheumatism in childhood does not lie in the typical manifestations to which the name is given, and from which the child can be seen to be suffering, but in a single feature of these—i.e., heart disease. This, in any but its later stages, is not to be detected by the general public. Yet, as is the case with all diseases of children, it is on parents as part of the public that we must rely for the making of the contact between patient and physician. The peculiar situation, therefore, arises that the significance of the disease is in a region inaccessible to the observation of patient or mother, and without relation to the severity of the symptoms appreciable by either.

Thirdly, we have no certain knowledge of the actual cause and nature of the disease. Two views are current. By the early observers, rheumatism, or more strictly, those manifestations of it that had so far been identified, was looked upon as evidence of a particular constitution of the body. Somewhat later, a specific infection seemed the more probable explanation. It is on this hypothesis, put forward and developed by F. J. Poynton and A. Paine,[2] that nearly all modern conceptions have been based.

### *Infection or Diathesis?*

To the practical aspect of the question the choice of hypothesis is crucial. If it be granted that a given disease be the result, or the result mainly, of a specific micro-organism, then effective measures against the disease must wait upon the successful isolation of the organism, or the practical application of immunological processes yet to be discovered. In the period before this has occurred the lines of work most likely to be fruitful will be those directed towards the modification of conditions within and around the child that favour infection with this organism. If, on the other hand, the diathesis theory be assumed, other lines of approach to the problem come into view. In the disease under review during the past two years certain evidence has been adduced to suggest the value once more of considering the constitutional or diathesis [3] hypothesis. According to this view, the outbreak of the disease would depend rather upon constitutional modifications of the bodily habit than an "infection" with a specific organism.

The importance of this point cannot be exaggerated. If the constitutional view be conceded, the emphasis of study, and ultimately of treatment, is thereby shifted. The dependence of treatment upon identification of the organism becomes greatly diminished, and the inquiry shifts to points concerning the endocrine and biochemical make-up of the individual. For the designing of work either with regard to the study of the disease or to the devising of means for its control, the choice of hypothesis is of fundamental importance.

### *Bearing on the Study of the Disease.*

Hitherto, all inquiry into the nature of the disease has been conducted by separate investigations specifically designed and carried out alongside of the ordinary clinical work. That is to say, while nearly all workers in this field have been keenly interested in the problems of the disease, and have contributed much of great value to our knowledge of its clinical course and manifestations, when a specific aspect has come to be investigated, a separate effort has been needed to examine and report on the material available. Two examples of this kind have recently been provided by the reports of the B.M.A. and M.R.C. Committees. Just so long as the infective theory of the disease exclusively dominates our conception of it this system is inevitable. Bacteriological and statistical work have no bearing upon the treatment of the individual patient at the time concerned until their goal has been reached.

If, however, the alternative hypothesis be taken for examination, a different type of attack is possible. Here the nature of the disease is conceived as within the constitution of the patient himself, as has been brought out recently by Hurst.[4] According to this view, the whole individual is the subject of inquiry and this inquiry can only be carried out by observation of the individual, whereas by an infection theory the subject of inquiry has to be isolated from material supplied by the patient. It is therefore necessary, if this hypothesis be held, to devise methods of study which shall concern themselves with the life-history of the patient, his biochemical and endocrine processes, his response to specific rheumatic infections, and to circumstances of his daily life. Considered from this point of view, no attempt has yet been made to carry out exhaustive research, although, as will be seen later, some tentative beginnings are already in being. The obstacle to all work of this kind is the nature of the contact at present existing between child and physician. It has been abundantly proved that acute rheumatism shows its main prevalence among children of the hospital

[1] Annual Report of the London County Council for 1925, vol. iii., Public Health Pub.

[2] Researches in Rheumatism, London, 1913.

[3] Llewellyn J. Llewellyn: Proc. Roy. Soc., Med. Jan. 1926, p.1.

[4] Brit. Med. Jour., May 7th, 1927.

classes. The contact of the profession with these children is through the work of the general practitioner and the hospital out-patient and in-patient departments. All these are heavily burdened with work, so that, on the one hand, it is only the child who is really ill—that is to say, who is suffering an exacerbation of his condition—who is brought for treatment. On the other hand, it is only possible by the undertaking of special and arduous work to correlate the records of these children. There is, therefore, in the system at present in force no facility for the continuous study of children from the constitutional point of view, and if this is to be undertaken some other machinery must be devised.

*Bearing on Prevention and Control.*

It is in a sense true in this, as in all diseases, that the problem of prevention and control is dependent upon the discovery of the cause or causes of the disease. But it is perhaps worth remembering, in the face of the difficulty of the problem, that the elimination of a disease can be achieved without an exact knowledge of its causation, as in the case of leprosy and typhus in Europe, and that the discovery of the Klebs-Löffler bacillus has not been followed by the disappearance of diphtheria.

In rheumatism it is clear that there are two aspects to the problem, each of which requires separate consideration. The one, that to which attention is increasingly being directed is the care of the heart of the already rheumatic child. The other is the attempt to control the incidence of the disease itself, and to achieve means for the prevention of its appearance in children who can be expected to become rheumatic. These problems, though intimately related, and common in origin, need to be kept very carefully distinct. All chances of success depend upon their separate consideration, and it is the failure to do so that determines the ineffectiveness of so many of the proposals at present current.

It is obvious that any scheme, either for the care of children already rheumatic, or for the study of the disease, must be based upon a definite hypothesis of the nature of the disease. Up to 1922, as has already been pointed out, work upon rheumatism has been conceived from the infective point of view and the results have been, on the whole, disappointing. In America a new step was taken with the formation of the Association for the Relief and Prevention of Heart Disease. This was intended primarily for adults, and embraced all forms of heart disease, but in 1915, W. St. Lawrence [5] adapted these methods to the study of the effect of rheumatism in childhood, and the first children's cardiac clinic was opened at St. Luke's Hospital, New York. The aim of this clinic was the continuous treatment and observation, upon a classified system, of rheumatic children, with special reference to their heart condition.

In this country nothing of the kind was attempted until 1923. In this year, interested by St. Lawrence's work, Prof. Leonard Findlay and the present writer organised a clinic at the Royal Hospital for Sick Children, Glasgow, for the continuous supervision of rheumatic children attending that hospital.[6] As a result of this work certain facts became clear. It appeared that the manifestations of rheumatism in childhood, usually covered by such terms as the acute and convalescent stages, needed the addition of a third term for a complete description—that of the quiescent stage. Under this head is considered the period between attacks, when the disease smoulders, but is not apparent. Upon the conception of this quiescent stage the whole work of a supervisory clinic is based.

*A New Basis of Classification.*

The second point of note arising out of the clinic is that of the importance of the basis of classification of these children. Hitherto, all classification of rheumatic children, whether explicit in records, or implicit in the mind of the observer has been based upon the clinical form of the disease—e.g., rheumatic fever, chorea, tonsillitis. It has, however, been agreed that the significance of the disease does not lie here, but in its tendency to cardiac involvement. These terms, therefore, offer no help to the observer in his attempt to protect the future of the child. The use of them, moreover, necessitates a somewhat lengthy and detailed note on the cardiac condition being added to each case, and renders very difficult any survey of a number of cases.

For the working of this clinic the emphasis was shifted, and a classification was devised upon the basis of the children's cardiac history. Since the clinical findings by different observers in any given cardiac case are not always necessarily identical, an endeavour was made to arrange the classes so the discrepancies arising from this source should be reduced to a minimum. The classification finally adopted was as follows:—

| | | |
|---|---|---|
| Class P. | .. | Potential heart cases—that is, cases with definite rheumatic history who have never had cardiac involvement, and are now well. |
| ,, A. | .. | Cases with a history of definite rheumatism with cardiac involvement, which has now disappeared. |
| ,, B. | .. | Cases with a definite rheumatic history and present signs of cardiac involvement, but no symptoms referable to the heart. |
| ,, C. | .. | Children with a definite rheumatic history and present signs and symptoms of cardiac involvement, but no disability for ordinary life. |
| ,, D.1 | .. | Cases with a definite rheumatic history, present signs and symptoms of cardiac involvement, and definite disability for ordinary life. |
| ,, D.2 | .. | Cases without a rheumatic history, but showing signs of a cardiac lesion, and with some definite disability for ordinary life. |
| Miscellaneous | .. | Cardiac irregularities, effort syndrome and cutaneous eruptions supposed to be of rheumatic origin. |

From a practical point of view such a classification has the following advantages. When the original classification has been made, subsequent notes are reduced to a minimum. "Mild Class B.," for instance, can describe all the essential points about a case. Whether this lesion is the result of an acute rheumatic fever, of growing pains, or of tonsillitis, though of interest, from the point of view of immediate treatment prognosis or recommendations to the mother, is of comparatively little significance. It also makes possible a rapid survey of a large number of cases without elaborate cross-indexing. By collection of those children whose classes have been changed during the year, immediate information is given regarding percentage improvement or deterioration in cardiac condition of the children. Further, any class of child can be quickly and easily isolated for reference, examination, or experimental therapeutics.

It will be noted that this classification embraces only children already the subject of a *definite* rheumatic condition. This was deliberate, because the original clinic was devised to study the possibilities of prevention and control of heart disease in children who were already rheumatic. In other words, to keep Class P. children from moving into any other class, and to move as many of those in the other categories as possible to Class A.

*An Attack Upon the Rheumatic Constitution.*

Another fact stands out clearly as the result of the work of this clinic—viz., that while work of this kind is very useful and effective within its own limits, if an attempt is to be made to achieve the *prevention* of rheumatism, a still earlier attack must be made upon the disease. But since all signs of rheumatism in children, other than those of acute rheumatic fever, chorea, and tonsillitis are ill-defined and susceptible of varying interpretation, the formation of a clinic upon this basis will involve the assumption of the existence of a rheumatic constitution. That is to say, children of rheumatic stock and those children who are subject to all forms of vague and indefinite

[5] Hospital Service Series, May, 1920, pp. 151–181.
[6] Brit. Med. Jour., 1926, i., 817 and 820.

rheumatism will also need to be included. Not only must the basis of the clinic be thus widened, but the treatment of these children must follow different lines, and be directed as much towards raising the child's general resistance, as to combating his definitely rheumatic tendencies.

These are as yet hypothetical conceptions and need wide testing before their acceptance. One attempt to do so is already in existence in the form of a "children's cardiac clinic" at the St. Marylebone General Dispensary, which has been in operation since 1926. At this clinic children, whether definitely or possibly rheumatic, are received from the age of 2 years, and supervised until puberty, when they join one of the adult clinics of the dispensary. The modifications introduced into the classification are as follows:—

1. Class P. becomes subdivided into—
   - P.1 .. Children with history and complaints suggestive of rheumatism, no cardiac involvement, and *no* disability for ordinary life.
   - P.2 .. Children with history and complaints suggestive of rheumatism, no cardiac involvement, and *some* disability for ordinary life.
   - P.3 .. As in original classification.
2. Class B. becomes subdivided into—
   - B.1 .. As in original classification.
   - B.2 .. Children with a history suggestive of rheumatism, present signs of cardiac involvement, but no symptoms referable to the heart.

The standardisation of the classification with that already in use elsewhere allows both accurate comparison of results, and full development of preventive measures in either.

Since the publication of the report of the Glasgow Clinic, the Science Committee of the British Medical Association have sat for a further consideration of the problem, and have issued a second report [7] on the Prevention and Control of Juvenile Rheumatic Infection. In this communication the existence of the quiescent stage is accepted, and the principle of continuous medical supervision emphatically recommended. The details of the one centre to which reference is made in the report are, however, so unsubstantial that it is impossible to discover upon what lines it is organised, what class of child is accepted, and how classified, and upon what lines the suggestions of treatment are made. The actual proposals of the report also suffer from the same vagueness; and this is unfortunate, because in the medical supervision of rheumatic children we have not only a method of treatment but also an instrument which can be used both for the examination of the effects of treatment and to the study of the disease itself. At present treatment of the disease and inquiry into its nature are far too apt to be kept in watertight compartments. What is needed is a method by which the natural history of the disease, the factors influencing or retarding its development, the effect of attempts to modify the constitutional habit, can be provided in a large number of cases in such a form as to be readily and easily manipulated and studied. It should be possible to achieve this and simultaneously to provide abundant material for ætiological and therapeutic research.

It is clear that work of this kind opens new avenues for correlated research, while it demands some modification in our attitude to systems for control of disease. Such methods, by providing material for investigation upon any desired lines, and by demonstrating the life-history of the disease, will exactly fill the obvious gap in our present system. It is true that there may be difficulties in associating these principles with the work of a voluntary hospital, but they are, I am confident, not insuperable. On the other hand, by work of this kind a weapon can be forged for the study of the constitutional hypothesis of rheumatism, which, it is contended, is the next and most hopeful step to be taken towards an understanding of the disease.

[7] Brit. Med. Jour., April 16th, 1927.

# SENESCENCE AND SENILITY.*

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[Dr. Leonard Williams commenced by acknowledging the wit and wisdom of previous contributors to the subject, and pleading that as senescence "like love is a story which never grows old, something may be gained if every now and again an effort be made to reconsider it in the light of modern fashions in medical thought." Pointing out that the circulatory system contains the physiological secrets of nature, he deprecated the preponderant rôle assigned by clinicians to the corpuscles, and urged due appreciation of the functions of the plasma as essential to the understanding of physiological and clinical phenomena, more especially where neurological problems are concerned. "The impetus of our start in life," he said, "the momentum which is to keep us in being, are derived from the liquor sanguinis which we inherit from our forebears"; and the interesting question in reference to the subject of the discourse was what ingredients in the plasma determine long life to some, and to others premature death, because the momentum is at an end. He continued:—]

## THE POTENCY OF THE PLASMA.

The mere enumeration of the ingredients of the plasma suffices to impress us with its capacity for variation, and causes us to wonder that in any given individual its composition should remain as uniform and constant as, judging by the consistency of character and conformation, it certainly does. The primary pattern, the broad lines of its composition, are evidently determined at birth. They are profoundly altered at puberty, it is true; and as the years roll on, the detail becomes modified; by study and suffering, refined; by selfishness and materialism, brutalised; but the general make-up, both physical and mental, is retained with surprising uniformity to the very end.

This potent fluid we know to contain first and foremost foodstuffs, among which we must include vitamins. These are for the nourishment of the tissues, to repair waste, to supply fuel, to liberate energy. We also know that before the foodstuffs, as originally ingested, can reach the blood stream, they are warmed, churned, and liquefied; and then, for the most part, they are subjected to a complicated chemical process in the liver. Some of them, nevertheless, escape the cleansing fires of this formidable viscus, and succeed in gaining direct access to the blood through the thoracic duct. I shall return to this matter later, but I may be allowed to pause here, to emphasise the obvious, by pointing out that if these simple facts of elementary physiology were simply faced and squarely acted upon, there would be far less premature senescence in the world than there is now. If the pristine adolescent purity of the plasma were preserved throughout the adult period, both senescence and senility would be indefinitely postponed. The impurities which creep into the liquor sanguinis, and guide us gradually to our destruction, are derived from the material which we ingest. If all of it could be passed through the hepatic furnace, matters might be better than they are. It is the backstair of the thoracic duct which causes most of the trouble. In this connexion, let us not forget the fact of which Sir Humphry Rolleston[1] recently reminded us—namely, that Carrel, Chamby, and Grandcourt have conclusively shown "that with frequent washings to remove waste products, tissue-cells can be cultivated indefinitely for years in vitro, and have an unlimited capacity for multiplication." But must we blind ourselves to the fact that "it's the washings as does it"?

* Being the Cavendish Lecture (abridged) delivered before the West London Medico-Chirurgical Society on May 27th.

[1] Concerning Old Age, Trans. Roy. Institut., May 13th, 1927

But the plasma does not restrict its recruiting activities to the gastro-intestinal tract; it lays other systems under contribution. The most important of these is the endocrine system. I need not insist upon the importance of the subtle essences of the glands which compose this system. The fact that they are poured straight into the circulating fluid without the intervention of a duct, of itself suggests their transcendence; as though Nature, in her thrift, dared not risk the loss or waste or change of one drop of so subtle and precious an elixir. We have only to recall what the absence of the thyroid tribute spells in cretinism and myxœdema: what the suprarenal, in Addison's disease; the meaning of the absent gonad at puberty, and of the lazy pituitary in adolescence, to realise the profound influence which these glandular subsidies to the plasma exercise over the maintenance and efficiency of the individual; for at any given moment a man may be said to be the resultant of his hormones. Of the ferments, catalysts and antibodies which are obviously contained in the liquor sanguinis we know next to nothing. But we know them to be there, not only adding to the complexity of the fluid, but enhancing and reinforcing its preservative and protective value to the economy.

[The lecturer then proceeded to point out that the functions of the plasma, though primarily donative, are more emphatically and essentially depurative, so that if a man persistently presented his plasma with unsuitable material, the extra energy that would be called for would lead to earlier exhaustion of the whole machine, the hostile material finding its way into the liquor sanguinis by means of the thoracic duct. Much of the premature senescence thus induced the lecturer attributed to gluttony and cookery, a pusillanimous acceptance of things as they are having been engendered. He continued:—]

### COOKERY AS PRACTISED.

In saying this, I must not be understood to condemn cookery as such, but merely the crude and cursory cookery of the day. Cookery is an art, which, properly practised, as an art, by artists, materially adds to the æsthetic enjoyment of the few good things of life; but, as usually practised in this country, cookery is merely a bad habit. Performed as it is, automatically and perfunctorily, it makes nourishment nasty and unappetising, and, by depriving food of vitamins and other subtleties, and in other ways, renders it foreign to our digestive juices. Cookery, as at present practised, is nothing but a species of more than usually stupid snobbery. Like the grand piano which, while suitable in the palace, becomes a piece of fantastic foolery in the cottage, cookery is too often merely penury masquerading as magnificence. Most sensible people would rather drink water than bad wine, but, judging by the common custom, the same people would rather eat badly-cooked food than eat uncooked salads, dairy produce, and those kindly fruits of the earth for which they vociferously thank the Lord on Sunday, and relegate to an emasculating stewing-pan on Monday. And this senseless habit not only imposes upon us, and upon our children, a series of dire deficiency diseases, of which ugliness is one, but it also confers on us most of the microbic maladies which decimate us. Our food is subjected to boiling, baking, braising, stewing, grilling, and other firing processes, and is thus made into a culture-medium for microbes. It is manipulated by the chapped and septic hands of a frowsy and uneducated frump—for the most part fat—to whom we are foolish enough to entrust the work proper to a skilful artist. And we tamely eat the resulting concoction in the pious belief that it keeps up our strength, and are surprised that our jaded liquor sanguinis insists upon deteriorating. *Homo sapiens* may be wise and watchful in some matters, and clever and cunning in others; in the matter of his food, he is nothing more than an ignorant and obstinate simpleton.

An impure plasmic environment, serious as it must be in the case of all the cells in the body, will disturb the various systems in the order of their complexity or nobility of organisation; the nervous system first, then the glandular, and so on through the muscles downward to simple connective tissue. For the earliest signs of degeneration, then, we must interrogate the nervous system, more especially that part of it which is concerned with control and intellectuality. These are typically the first to show signs of decay; the flower goes before the leaf, the leaf before the twig; but that is not invariably the case. In one disease, at any rate, Parkinson's disease, which may be described as the personification of old age—"where palsy shakes a few sad last grey hairs"—the various systems seem to be smitten almost equally and simultaneously. . . . I have said that premature senescence renders us tamely submissive to evils as we encounter them. Man is by nature a hunter and a fighter, and when he ceases to be so, he has already begun to degenerate. When youth loses its fire, maturity its illusions, and middle age its ambitions, it is surely a sign that the brain cells are being bathed by a liquor sanguinis which is already bereft of its pristine vigour; and the earlier in life the backsliding occurs, the more certainly does it point to an active intoxication of the plasma, to a filling up of the cup with cumulative culture bouillons. The genus homo inherits from his simian ancestors a certain playful devilry of spirit, indicated in youth by a sense of boisterous humour. When that gives place to a square-toed pomposity of attitude, as who should say of all things, "we are not amused," then it means that the plasma has been deprived of its erstwhile purity and the descent has begun. That every time of life has its appropriate attributes I am willing enough to admit. The airs and graces of youth sit badly enough on the aged. Tully said of Hortensius, "He remained the same, but the same no longer became him." This particular affectation is less prevalent among men than it is among women, but it is ugly in either sex because it is essentially forced and unnatural. It is not the external gestures of youth that the senescent should seek to retain, but the spirit of adventure and the chase; and these can be displayed in the mental arena no less than in the muscular. Smug-faced satisfaction is the one great and unforgivable sin.

### THE VIRTUES OF FASTING.

[The lecturer then urged that to maintain the sovereignty of restraint and moderation over insidious and insistent invitations to indulgence demanded watchfulness and determination. In brief, this meant a certain measure of fasting, and he used the word advisedly, indicating that fasting and starving are not synonymous, for when a man fasts he lives on his redundant reserves. He continued:—]

It is a strange and saddening reflection upon our therapeutic methods that our attitude towards the *vis medicatrix naturæ* should be so shamefaced and stealthy. We recognise in our heart of hearts that all our healing is due to the wizardry of its working, and yet we treat it as though it were an unqualified assistant, open association with whom would surely get us into trouble with the General Medical Council. We muddle it with mixtures, and vex it with vaccines; we slice it with scalpels and fix it with forceps, but we are seldom firm enough to give it a free hand. And it is more especially in the matter of feeding that the free hand is withheld. At a time when the energies of the whole economy are bent upon restoring the equipoise by attacking a microbe, neutralising a toxin, or righting a metabolic wrong, it is forced to turn aside in order to deal with uninvited and unwelcome foreign guests which, in the form of beef-tea and other so-called nutritious, but in reality excrementitious, concoctions, are poured into a stomach which is screaming aloud for repose. In such circumstances the only food which even spare people require is there, in their tissues. Moreover, it is there, in a physiologically assimilable form, prepared in Nature's kitchen and stored in her larder, for use in such a crisis as we are considering. But, instead of allowing the economy to utilise this partly digested food which

is willing and waiting, we compel the wasteful expenditure of precious energy by constraining the victim to undertake the onerous and laborious task of digesting and assimilating alien and unwanted material. In comparison with the ordinary British invalid, the forcibly-fed Strasbourg goose is an ascetic.

If this aspect of the matter is explained to them, there is, as a rule, very little difficulty in inducing people to face the ordeal of fasting; more especially in chronic metabolic diseases, in which the patient, though never very ill, is never quite well and is properly impatient of his impaired capacities. The only trouble arises from the fact that so many people, especially women, are deeply imbued with the epic and esoteric element in all illness. We, of the profession, are charged to do something; preferably something mysterious or heroic. An operation, an X ray examination, a cystoscopy, a sigmoidoscopy—certainly; but a policy of "wait and see" what Nature can do for herself without the meddlesome hand of man—never.

And yet fasting is the simplest and safest of all remedial measures. It is Nature's way. During the first few days, when the expectant stomach, accustomed to stimulation, is made to suffer the sorrows of deferred hope, it may be difficult to discern any blue in the sky. Nevertheless, by arousing the fighting instinct latent in most people, even the gloom of these few days may be lightened by the sure prospect of ultimate victory; and with these days behind him the patient is impelled to wonder why he ever eats anything.

### ARTIFICIAL REJUVENATION.

[Referring to the popularity as a topic of tea-table conversation of procedures for artificial rejuvenation, Dr. Williams gave it as his opinion that Voronoff's reasoning was sound, adding that he himself had seen excellent results from grafting operations. He would, however, like to add:—]

In my judgment the Voronoff operation does not prolong life, but it does prolong efficiency for the duration of life. It contributes nothing to longevity, but a great deal to the prevention of morbid senility. It possesses the inestimable merit of enabling a man to make his exit by crisis instead of by lysis. My point, however, is that the operation ought never to be necessary. Under the present dietetic dispensation there will always be hundreds of people whom it will benefit enormously; but if such people had only paid a due respect to the purity of their liquor sanguinis, the necessity for grafting would never have arisen. The best measure of rejuvenation is a thoroughly depurated blood-supply, and the best means for securing that is to practise moderation punctuated by fasting. It is better to find salvation in a dietetically sober and righteous life than to seek to conjure back competence by a cutting operation. Nor must it be supposed that the discipline of fasting as a measure of preservation is an idle fancy altogether lacking in scientific sanction. In a recent lecture Sir Humphry Rolleston [2] says:—

> "It is interesting to recall that in the humble planarian flat-worms the life cycle may be dramatically changed; by starvation they not only become smaller, but their structure becomes simpler. . . . By alternate starving and feeding these flat-worms have been kept stationary while others passed through nineteen generations, thus showing that the duration of existence of cells is not so much a matter of time as of the work or metabolic changes that go on inside them."

And yet, though by laborious days, occasional fasts and grafts, and otherwise, we may succeed in preserving our plasma in a state of cleanliness, thus preventing precocious decadence, the ugly fact remains that sooner or later, in one form or another, senility awaits us all. For, although by wisdom the plasma may escape pollution, it cannot in the nature of things avoid eventual dilution. And we all desire that the stage of dodderance may be short. Though we are taught to pray to be delivered from sudden death in the case of those we love—a selfish prayer—each one is entitled to hope for a sudden termination in his own case. The stage of the slippered pantaloon has no attraction for any of us. Rather do we envy the fate of Oliver Wendell Holmes's one-horse shay which went for a hundred years and a day, and then disappeared into nothingness:—

> "All at once and nothing first
> Just as bubbles do when they burst."

That is a natural and even laudable ambition, but it were unreasonable to expect escape from some evidences of gradual decline. This is a matter which would seem to depend very largely upon the endocrines.

[The lecturer then alluded to the natural sequence in which living dissolution occurs, saying that the higher centres as a rule mercifully succeed in maintaining their dominance till the end. He quoted Bacon and Swift as caustically critical of the defects of old age, and closed by presenting another side of the picture in these words:—]

There are certain qualities of head and heart derived from the manifold experiences of service, sacrifice, and suffering, inevitable in a long life, which are peculiar to the unpolluted plasma of natural senility, and these qualities, at their best, are of immense advantage to those families and communities which are wise enough to profit by them. Among such qualities are judgment, insight, tolerance, and equanimity. These are natural to the stage of healthy old age, and it is these which we must seek to cultivate when the signals warn us that we are nearing the place; when we become coldly conscious of the glimmer of twilight, "When lengthening shadows on the lawn, give notice to the startled grass, that darkness is about to pass."

[2] Trans. Roy. Institute.

# Clinical and Laboratory Notes.

## A CASE OF HYPERTROPHIC OSTEO-ARTHRITIS OF THE CERVICAL SPINE.

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FOR several reasons we consider the following case of sufficient interest and importance to be worth record.

A. B., a young man, aged 21, was sent to the out-patients' department, Aberdeen Royal Infirmary, in October, 1926. He complained of weakness and uselessness of the right hand.

*History.*—About five years ago he noticed that the right hand was weaker, more clumsy in action, and more easily tired than the left. Two years ago he noted that the right hand was smaller than the left. At no time was there pain or discomfort in the hand apart from a tendency to become easily tired.

*General Condition and Previous History.*—He is big, strong, and active, a warehouseman, and has never been away from work on account of illness. He had measles at the age of 5, complicated by suppurative otitis media. This ear condition became chronic and persists. Apart from a fall when 12 years old there is no history of trauma. This fall apparently did not cause any disablement.

*Condition on Examination.*—All joints of the upper extremities moved fully and freely. There was definite weakness and wasting of the muscles of the right arm as follows: the intrinsics of the hand and the flexors and extensors of the wrist and fingers. The muscles of the right upper arm were, perhaps, a little smaller and weaker than those of the left side, but there was no definite wasting. We thought this little difference of the upper arm muscles due to disuse, or rather to the fact that the left arm was used a great deal more than the affected arm. There was

no incoördination and no tremors of either upper extremity. Sensation was defective for wool and pin-prick along the ulnar border of the right forearm. Neck movements were slightly restricted in all directions, especially flexion to the right. On the right side of the neck there was noticeable a protuberance just above the middle third of the clavicle. This protuberance felt hard and bony. Trunk movements were full and free. Sensation over the trunk was perfectly normal for wool, pin-prick, and thermal stimuli. The abdominal and cremasteric reflexes were present and equal on the two sides. In the lower extremities movements, power, coördination, and sensation were normal. The knee-jerks were too brisk, and there was a tendency to a brief clonus on the right side. The plantar reflexes were definitely flexor in type.

There was no sphincter trouble. No evidence of cervical sympathetic dysfunction was present. There were no Heberden's nodes. Syphilis may be excluded, the W.R. being negative. There was no evidence of genito-urinary infection. We considered the symptoms due to pressure on the lower roots of the brachial plexus of the right side.

Radiograms show a massive enlargement of the lower cervical spine. On the anteroposterior view (Fig. 1) there are two lateral curves, the upper concave to the right, the lower concave to the left. The lateral view (Fig. 2) shows an increased forward bending about the middle of the cervical spine. The intervertebral discs have apparently disappeared in places. The bodies, laminæ, and spinous processes of the lower cervical vertebræ exhibit a marked increase in density with apparent narrowing of the intervertebral foraminæ. Those in the lower part of the cervical spine cannot be made out. Radiograms of dorsal and lumbar spines show no osteo-arthritis.

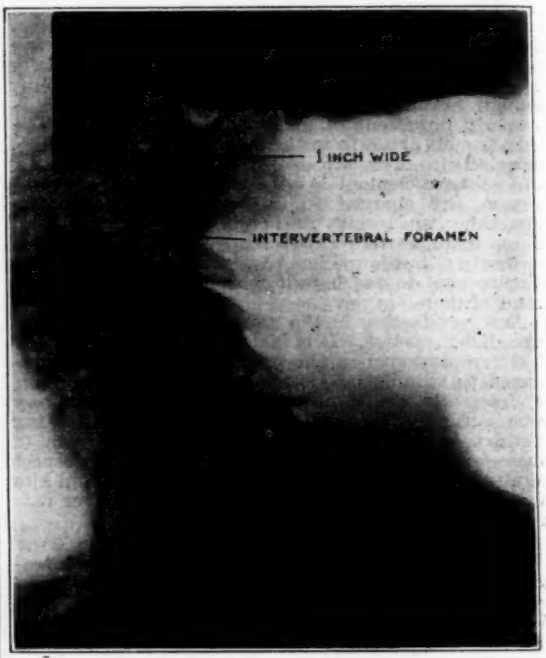
*Discussion.*

This is presumably a case of hypertrophic osteo-arthritis of the cervical spine. The condition is not common. Elliott [1] was unable to find in the literature any specific reference to it. Our case would appear to support his view that the lower cervical region is especially susceptible to this disease. We do not wish to enter here into a discussion of the ætiological factors, but would note the presence of a focus of chronic suppuration—namely, otitis media. We would suggest that the tendency to select the lower cervical spine is not unconnected with the joint mechanisms of this part, for here we find a flexible segment connected to a relatively rigid portion.[2] This would appear to be a likely site for the occurrence of special stresses and strains and therefore likely to determine the site of the osteo-arthritis. The case differs from those cited by Elliott in that pain is not and never has been present. It also shows, as far as radiograms are concerned, a greater hypertrophy of the affected spine.

FIG. 1.

Anteroposterior view of cervical region.

FIG. 2.




Lateral view of cervical region.

[1] Elliott: Journal of Bone and Joint Surgery, January, 1926, vol. viii., No. 1.
[2] Treves and Keith: Surgical Applied Anatomy, 1918, p. 652.

## A FURTHER NOTE ON THE WATER-SOLUBLE OVARIAN HORMONE.

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AFTER reading the paper by E. Laqueur, P. C. Hart, and S. E. de Jongh in THE LANCET of May 28th we feel that some further remarks are necessary in order to clear up certain points raised by these authors. In the first place we should like to draw attention to the fact that our paper was intended merely as a note upon a method evolved by ourselves for obtaining the hormone in a water-soluble form.

Whilst we were familiar with the published work on the subject, including that of Prof. Laqueur and his collaborators, it was clearly impossible to enter into a detailed historical review. Since, however, we are taken to task for not referring to a paper in the Proceedings of the Royal Academy of Sciences,[1] it will be as well to state that we were well acquainted with its contents, and had, in fact, repeated some of the methods given there. We can only repeat our statement, "in our hands, these methods have proved unsatisfactory." One of the difficulties encountered in this work was the great variety of methods given,

[1] Laqueur, E., Hart, P. C., de Jongh, S. E., and Wijsenbeek, I. A.: Proc. Roy. Acad. Sci., Amsterdam, 1925, xxviii., No. 10.

with little or no indication as to which one the authors finally recommended. The methods are almost entirely confined to preparations from liquor folliculi. One method is described in which the proteins are precipitated with colloidal ferric hydroxide, but the authors state that this method is not satisfactory. A second method consists of extracting liquor folliculi with chloroform. Our difficulty arose in the separation of the emulsion formed, and we were unable to obtain any assistance in this direction from the published details. The authors state :—

"We found it useful to prevent the forming of emulsions when shaking out with the volatile solvent; this may be done by completing the coagulation of the proteins by adding salt or acid, by centrifugalising, &c."

Again they state :—

"Besides chloroform we used carbon sulphide, carbon tetrachloride, benzene, petroleum-ether, tetralin, ligroin, ether, acetone, and ethyl acetate. In principle all these yielded identical results, but our experiments are still too few in number. Often the residue from the volatile solvent at first formed an emulsion with the water; in most cases, however, a simple filtration made the fluid clear; often the solution was water-clear from the first, and then its content of solids was minimal. Probably this depends, besides on the nature of the solvent (which must dissolve menformon with as little water-soluble impurities as possible), on the freshness of the follicular liquid, and further on the completeness of the precipitation of the proteins, which then take the other colloidal constituents with them. Finally the completeness with which the volatile solvent is removed plays a part, eventually also the temperature at which this has been done. (We worked at atmospheric pressure, in vacuo, and in an air current at about 35°C.)

"All these factors, and many more, are still to be investigated much more completely."

It can be seen that the authors do not intimate which of the alternatives is really the most successful, and it would appear that we were unfortunate in choosing one of their less successful recommendations.

In their recent paper in THE LANCET Laqueur, Hart, and de Jongh give an account of the method which they now employ for the extraction of the hormone from placenta. As yet we can make no comment upon this method since we have not had an opportunity of investigating it thoroughly. We may mention, however, that it appears to differ considerably from any of those previously published by these authors.

With regard to the physical and chemical properties of our extracts, we can only infer that the authors have mis-read our papers, since we have never suggested that our extracts consisted of the pure œstrus-producing hormone; indeed this is clearly not the case. This is shown, for instance, by the fact that the further purification of the substance is a comparatively simple matter, and is at present being investigated by us. Thus, with regard to the effect on blood pressure, the Amsterdam workers state that "... whereas less pure preparations such as have been described in England by Dickens and Dodds towards the end of 1925, exert an appreciable lowering action upon blood pressure. We think those authors are not quite justified in ascribing this to the hormone itself; it is more probably an effect of the impurities." In the paper referred to [2] this action was not, of course, attributed to the hormone at all, but was described as a property of the extract prepared by the modification of Herrmann and Fränkel's and Allen and Doisy's method, which we were then employing for preparation of an active substance from ovaries and placenta. This is made quite clear in the paper in question, where we have throughout referred to the material as "the extract" and not as "the hormone." The water-soluble material prepared by the process which we recently described is without action on the blood pressure.

The position with regard to this hormone is similar to that of insulin. The earlier crude extracts caused a marked depressor effect, as was shown by Dudley in 1923.[3] Subsequent purification clearly showed that this depressor action was due to impurity, which, as a result of further investigation, could readily be removed.

Similar considerations apply also to Laqueur, Hart, and de Jongh's criticisms of our observations on the chemical and physical properties of our recent extracts. We recorded these since the extract was prepared by a new method and its properties were therefore considered of sufficient interest to report. The fact that our material, the purification of which we have reason to believe we will be able to continue much further, contains sulphur and gives certain qualitative reactions, is, of course, no indication that the pure hormone itself is responsible for these properties. There is nothing in our paper which could justify such an assumption. It is clear, however, that our material resembles the final products of Laqueur and his co-workers in that neither is soluble in ether or acetone, and both are soluble in water. This would tend to confirm the view recently put forward by us that our 1925 fatty material, like that of Herrmann and Fränkel and Allen and Doisy, probably consisted of the water-soluble substance retained in solution in fat-solvents by the presence of large quantities of inactive fatty substance.

We have other evidence confirming the ease of adsorption of the active principle. Thus, after prolonged hydrolysis of the water-soluble product with dilute acid, and subsequent neutralisation, although the solution retained a considerable portion of its activity, the addition of picric acid solution did not cause the formation of a precipitate of picrate. Thus the method of preparation which we have adopted probably involves the adsorption of the active principle on to the precipitate of protein picrate formed on adding picric acid to the acid digest.

We are extending our observations in this direction and these will form the subject of another communication.

[2] Dickens, F., Dodds, E. C., and Wright, S.: Biochem. Jour., 1925, xix., 853.

[3] Dudley, H. W.: Ibid., 1923, xvii., 376.

## AN ATYPICAL CASE OF CONGENITAL JAUNDICE WITH HEPATIC CIRRHOSIS.

BY R. L. MACKAY, *M.C.*, B.SC., M.D. GLASG.

THE comparative infrequency of fatal jaundice in the early days of life, and the fact that a post-mortem examination was performed, justify description of the following case.

*Clinical History.*—On August 22nd, 1924, I was called to see a baby, then 11 days old. The mother complained that during the previous seven days the child had become increasingly yellow. At birth it had had a normally coloured skin and weighed 8 lb. For five days it was breast-fed, but about the fifth day the midwife in attendance noticed a suggestion of jaundice and to arrest this ordered the substitution of a proprietary food for the breast-feeding. There had been practically no vomiting till the ninth day, when it was given castor oil.

On the eleventh day, when I first saw the child, it was weakly and wasting, had widespread jaundice of the skin, lips, and sclerotics, and yawned frequently. The facial lines or furrows were very prominent, giving an "old man" appearance. Temperature, pulse, and respiration were normal. The umbilicus was not quite healed but was free from any sign of inflammation, and there was no rash around the anus or on the buttocks. The fæces were yellow-green in colour and slightly curdled, but no mucus was present. No abdominal tenderness was detected, but the liver was much enlarged and easily palpable. The spleen was not palpable. There had been no vomiting in the previous 24 hours. Calomel gr. ¼ was given.

The condition then developed as follows: Twelfth day: Constipated. Hyd. c. cret. given. Sod. cit. added to feeds. Thirteenth day: Child appeared better. Jaundice less deep. No yawning. No marks on buttocks. Breast-feeding resumed. Sixteenth day: Jaundice still marked. Took parents' blood for Wassermann reaction. Both proved negative. Twentieth day: Slight papular eruption appeared on buttocks, not much different from the common maculo-popular napkin rash. No snuffles, no coughing, no vomiting. jaundice slightly less marked. Child still on breast, but not gaining ground. Twenty-fifth day: A small spot of fresh

blood observed in the stool. No vomiting, no colic, no diarrhœa. No rash now on buttocks. Twenty-sixth day: Slight vomiting of fresh blood occurred. In the evening this recurred, and then became frequent, until the child died about 4 A.M. on the twenty-seventh day, bleeding from nose, mouth, and anus. Though a request had been made several times for it, no sample of urine could be obtained.

*Family History.*—The mother, aged 41, had always been healthy and robust. She had a sallow complexion. There was no history of jaundice in any of her relatives and no personal venereal history. Her Wassermann reaction was negative. The record of her pregnancies is as follows: (1) Male, alive and well, aged 11 years. Sallow colour, Has a slightly dilated heart, a mitral murmur, and occasional albuminuria. (2) Male, miscarried at 5½ months. (3) Male. died aged 10 days, from jaundice. (4) Female, died, aged 4½ years, from pneumonia. (5) Female, died aged 2½ years, from whooping-cough and convulsions. (6) Female, died from jaundice, aged 3 weeks. Premature at 8 months. (7) Female, died from jaundice, aged 4 weeks (the present case). (8) Male, born March, 1926. A perfectly healthy child.

The father has a sallow complexion, as have also his brothers and sisters. None appear to have had jaundice. No venereal history obtained. Wassermann reaction negative. Teetotal. Recent erysipelas.

*Post-mortem Examination.*—The parents would only permit a short examination of the abdominal cavity. This was carried out about ten hours after death by Dr. W. M. Brown and myself. The following points were noted:—Mouth: full of froth and blood. Stomach: contained large clots of blood, source not ascertainable; mucous membrane bile-stained; no pyloric stenosis. Small intestine: walls hæmorrhagic; lumen full of blood. Large intestine: no marked changes in walls; blood in lumen; a few recent adhesions around colon. Anus: blood exuding from it; skin normal. Peritoneal cavity: no free fluid. Liver: much enlarged and firm in consistence; deeply bile-stained; surface smooth. Gall-bladder: normal in size, containing a little viscid muco-bile; cystic bile-duct patent. Common bile-duct: a small soft mass, size of a pea, covered with mucus but of a consistence firm enough to block the duct was found in the lumen; it was easily broken up by the fingers. It was difficult to pass a probe through the duct to the duodenum. Spleen: normal in size and appearance. Umbilicus and vein: no sepsis present.

*Histological Examination.*—I am indebted to Dr. John S. Young, of the Department of Pathology, Glasgow University, for the following report on the sections:—Liver: advanced generalised pericellular cirrhosis; liver cells much destroyed; bile-ducts dilated and full of bile, but the lumen everywhere intact; no spirochætes present. Spleen: shows nothing abnormal; no spirochætes present (Levaditi's method). Kidneys: a slight increase in interstitial tissue. Common bile-duct: lumen patent and normal; no inflammatory changes in wall.

### *Diagnosis.*

The clinical course of this case made exact diagnosis difficult during life, and the post-mortem findings, distinctive as they are, tend to increase that difficulty. Jaundice occurring in infancy and childhood may be considered as likely to be one of the following varieties:—

(1) *Simple icterus neonatorum* is definitely eliminated by the long duration, the enlarged liver, the hepatic cirrhosis, the hæmorrhages, familial history, and fatal ending.

(2) *Infective jaundice* (Winckel's and Buhl's varieties). The absence of any signs of sepsis, of umbilical hæmorrhages, or of pyrexia, hæmaturia, splenic enlargement, cyanosis, or of a prevailing epidemic, appear to be strong evidence against this variety, while the advanced nature of the cirrhosis make it probable that this had begun during intra-uterine life.

(3) *Acute catarrhal jaundice* affects older children, is rarely fatal, is unaccompanied by widespread hepatic cirrhosis, and by such marked constitutional disturbance as was found in the case under consideration.

(4) Jaundice due to *biliary concretions or calculi* does occur and is of marked degree. It may be present at birth or shortly afterwards. The small mass found post mortem in the common bile-duct was so soft and moist, and so easily squeezed flat and broken up between the fingers, that it seemed of recent formation—possibly a few hours or a day or two before death—and could not, therefore, be considered as the initial cause of the hepatitis. Further, above the mass there was no dilatation of the common bile-duct, and the gall-bladder itself contained very little bile.

(5) The apparent familial tendency to jaundice might at first favour a diagnosis of *familial acholuric jaundice*. The intensity of the jaundice, its rapid course and fatal ending, the small and cirrhotic liver, appear to eliminate this variety. Unfortunately, the fragility of the red blood corpuscles was not determined.

(6) *Infantile biliary cirrhosis* occurs chiefly in India, is familial, generally begins about the seventh or eighth month of life, and is accompanied by hepatic cirrhosis of an intra- and inter-lobular type. The onset of the disease by the fourth day, its rapid development and ending, the small spleen and generalised pericellular cirrhosis, and the rarity of its occurrence in this country do not favour this as a diagnosis.

(7) *Acute yellow atrophy* has been recorded as a possible cause of jaundice in the new-born, but there is little in the present case to suggest it.

(8) Congenital obliteration or *stenosis of the bile-ducts* is a rare anomaly. It may be familial, and give rise to portal and biliary cirrhosis with a cholangitis affecting the small and large ducts and the gall-bladder. There is fibrous thickening of the bile-ducts. The lumen may be recognisable microscopically, but no epithelial cells are present. There is an enlarged cirrhotic liver and a large spleen. The case here considered bears a reasonably close resemblance to this condition. The early, progressive, severe jaundice, the absence of pyrexia, the emaciation and hæmorrhages, and the enlarged cirrhotic liver might seem to settle the diagnosis. A careful examination of the bile-ducts, however, revealed no unusual narrowing or obliteration, the lumen, though small, being free from the liver to the duodenum, and the walls of the duct being normal on histological section. Further, the first stool observed contained bile. Thus, the anatomical condition necessary to establish this as a clinical diagnosis was found lacking on post-mortem examination. The absence of a large spleen is incidentally an important factor against this as a diagnosis.

(9) *Congenital syphilis* may appear a possible explanation. I have shown the liver sections to six independent pathologists who have each pronounced the case on the histological evidence as being more or less characteristic of congenital syphilis. The papular rash on the buttocks and the "old man" appearance might be possible factors in favour of this as a diagnosis. Against congenital syphilis there is (1) the absence of spirochætes in the liver and spleen, (2) the small spleen, (3) the absence of "snuffles," (4) the negative parental Wassermann reactions, (5) the non-venereal parental history, (6) the absence of a history of miscarriages or still-births, and (7) the fact that a normal healthy child has since been born.

### *Conclusion.*

It appears, therefore, that the evidence is so strong against each of the two most probable causes of death—namely, congenital syphilis or congenital obliteration or stenosis of the bile-ducts—that a definite diagnosis cannot be given. It is suggested that no one of the nine conditions here briefly enumerated was alone operative or primarily responsible for death. Further than that it is impossible to go with certainty. It may be that the explanation is in the presence of some unknown toxin circulating in the blood of the mother during her pregnancy (or pregnancies) without apparent harm to her fully formed cells, and circulating in the fœtus, where it led to such a complete destruction of hepatic tissue that the condition virtually became incompatible with extra-uterine life. For such a condition no postnatal treatment would be of any avail.

*References.*—Still, G. F.: Common Disorders and Diseases of Childhood, 1920, p. 305. Cautley, E.: Diseases of Infants and Children, 1910, p. 363.

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THE DEBT ON WESTMINSTER HOSPITAL.—During the present week an attempt is being made to clear off the debt of £17,000. The hospital, which was founded in 1719 with 12 beds, now has 230 beds, 100,000 out-patient attendances, and 17,000 casualties. The week's series of events began with the festival dinner last Friday in the hall of the Inner Temple, presided over by the Lord Chancellor, the other guests including the Speaker of the House of Commons and the Master of the Rolls. Since Monday last there have been daily health talks, the speakers for the week being Sir James Purves-Stewart, Dr. Adolphe Abrahams, Dr. Donald Paterson, Mr. Rock Carling, and Mr. Arthur Evans. On Monday there was a choral service at Westminster Abbey, with an address by the Dean, and on Tuesday Princess Arthur of Connaught opened a bazaar at the hospital. On Derby Day there were collections at Victoria and Waterloo stations, and on Thursday a concert at the Central Hall. The hospital has been open to the public on three afternoons when there were exhibitions of X ray and sunlight apparatus.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SECTION OF EPIDEMIOLOGY AND STATE MEDICINE.

A MEETING of this Section was held on May 27th, Dr. S. MONCKTON COPEMAN, the President, in the chair.

Dr. W. S. C. COPEMAN read a paper on the

#### PROPHYLAXIS OF MEASLES.

He quoted statistics proving that the severity of measles had been grossly underrated in the past. The death-rate in institutions of the Metropolitan Asylums Board in 1912 had been 20·3 per cent. under 1 year and 18·8 per cent. between 1 and 2 years. Methods of prophylaxis effective in other exanthemata were less efficient for measles on account of its long period of incubation and four days of often undiagnosed invasion with maximum infectivity. Epidemics of measles provoked less interest than epidemics of diphtheria, scarlet fever, and small-pox, though they were often more fatal. Present methods of prophylaxis were more or less traditional and were not rigorously carried out. Wheaton and MacNalty recommended compulsory notification, early visitation of the home, and provision of adequate home nursing and medical care. If some means of producing immunity in the susceptible could be added to these methods they would help to control the epidemics which occurred every few years.

*Serological Methods.*

After outlining the history of active immunisation against measles, Dr. Copeman went on to describe the five ways in which the serum of convalescents, and to a lesser extent of adults who had had measles, could be used. In an emergency citrated whole blood could be substituted for serum.

(1) *Seroprevention.*—Serum could be injected into a healthy child or into an infected child during the first five days of incubation, producing a passive immunity lasting about a month. A larger quantity was required for the infected child than for the healthy. Unfiltered serum was more potent than filtered. The recommended dosage varied, but 6–15 c.cm. were the limits suggested for an adult during the early days of incubation. The dose had to be increased in direct ratio to the time of exposure to the disease.

(2) *Seroattenuation.*—The serum might be injected into contacts after the sixth day of incubation. Measles would probably develop, but would be modified in its course, and active immunity would follow the attack. This was the method of election. The illness following had no catarrhal symptoms, Koplik's spots, high temperature, or complications.

(3) Injection of serum at the beginning of the period of invasion would not affect the course of the disease, but the rash around the site of the injection would be blanched. (Phenomenon of Debré.)

(4) *Serotherapy.*—Injection of the serum after the disease had declared itself had no apparent action.

(5) *Serovaccination.*—Injection of serum into the unaffected subject, followed by inoculation with the virus, produced active immunity, with less danger than a natural attack.

The essential points in collection and preservation of serum were that the donor should be over 10 years of age, tested for syphilis, malaria, and tuberculosis, and should have had an unmistakable and first attack of measles with uncomplicated convalescence and completed defervescence. 500–600 c.cm. of blood might be taken from adults, and the donor must be watched for several days afterwards lest he be in the incubation period of some blood-borne disease. The blood should be taken between the sixth and ninth days after defervescence, this being the period when it was richest in antibodies, and it should coagulate at room temperature, the serum being decanted aseptically and tested for sterility. To standardise potency it should be pooled with serum from at least two other subjects, and to ensure purity it should be kept in an ice-chest for four or five days before use. In the cold it retained potency for several months. If doubt existed of its sterility it might be twice heated to 50° C. at 24-hourly intervals or one drop of 5 per cent. carbolic acid could be added for every 10 c.cm. R. Degkwitz had produced serum from sheep, but this apparently only had an inhibitory action on the symptoms and would not replace human serum. Recently Ruth Tunnicliff and A. L. Hoyne had reported good results with goat serum, using the green-producing organism. Seroattenuation had the double merit of being applicable during an epidemic and yet of producing active immunity. Most of the results spoke emphatically for the value of seroprevention in measles. Debré and Joannon, especially, reported the eradication of two epidemics at their outset in a Médan infant asylum where the mortality in previous outbreaks had been 70 per cent.

*A Scheme for Combating Epidemics.*

Dr. Copeman then outlined a scheme which he had elaborated from the work of many authorities, for dealing with epidemics of measles. Our present aim was, he said, to prevent every case, and we were singularly unsuccessful. It would, moreover, be unwise to attempt to stamp out the disease, unless adequate artificial immunisation were enjoined, for if it returned to virgin soil the result would be a tragedy like that of the Faröe and Fiji islands. We should aim instead at control. It was during the fatal first three years that we should prevent measles, postponing it till over 5, when few healthy children die. The population under 3 was 6 per cent. only of the whole, and the incidence of measles at this age, despite the heavy death-rate, was only 12–15 per cent. of the whole. To concentrate on this fraction would need no greater organisation than the present system. The scheme would require a skeleton corps of trained public health workers, who could call upon a large body of less specifically trained, but still useful, workers from other departments in a short time. Secondly, it would require a knowledge of where all children under 3 years were to be found. Compulsory notification would be necessary. The centre of every unit should be a serum-collecting station with a small laboratory and waiting-room, attached for choice to some institution where measles cases were available. The unit would generally be a large town, and the M.O.H. the central authority. Between epidemics the corps would collect a store of serum and educate parents about the danger of measles *under 3*, and the means of preventing it. The chief available channels for this propaganda were the press, private practitioners, lectures, and posters in streets, hospitals, centres, &c. The staff should possess a card index containing particulars of all children under 3 in their area; duplicate copies of birth certificates sent to the M.O.H. would provide information of 90 per cent. of the true number of births.

*Discussion.*

The PRESIDENT mentioned the recent work of N. S. Ferry and L. W. Fisher, who claimed to have isolated a diplococcus causing measles. Until this should be confirmed our ignorance of the bacteriology of measles made us dependent on convalescent serum for immunological methods.

Sir GEORGE BUCHANAN disagreed with Dr. W. S. C. Copeman's statements about present attempts to prevent measles, and upheld the view that it was better to have measles and get it over. This had been strikingly confirmed by the experience of unsalted peoples, such as Highland troops in the war and the natives of Fiji, who contracted the disease in a very severe and fatal form. It should be warded off until

after the third year of life and then got over under as good conditions as possible. Yet the children of better-off people did not die in large numbers even under three. He thought the serological method suggested by Dr. Copeman very interesting and would like to see it tried over here, but questioned whether the public would ever allow another child's serum to be injected. From the practical aspect it would be better to work up the goat-serum method if that were possible.

Dr. A. MONTAGUE described the 1875 and 1903 epidemics in Fiji. Between these two dates measles had been entirely kept out by careful restrictions. In 1903, when 3000 people died, the officials realised that a grave mistake had been made and decided to allow measles to enter freely. Since then there had been some slow smouldering epidemics, but the disease had had no practical importance. Their policy for the future was to allow it to do its worst.

Sir WILLIAM HAMER agreed that the present system in this country was not that of preventing children from getting measles. Since the M.A.B. organisation had been enforced the death-rate from measles had gone down by half, and this was not accounted for by the falling birth-rate. It would probably go down a great deal more if all cases of measles could really be removed to M.A.B. hospitals in the early stages. Infection meant real and lasting protection throughout life, and as it usually occurred before the children left the infant schools education was not interfered with. This was a point to be borne in mind. Would they be assured of this if dealt with by Dr. Copeman's method?

Dr. R. A. O'BRIEN spoke of the difficulty of getting a supply of serum, and mentioned a few cases in which it had been tried with apparent success—almost entirely in the families of medical men. Tuberculosis was not a real danger, and malaria was not of much importance in this country; it was very rare to have spirochætes circulating in the blood except in cases of florid syphilis, but nevertheless the Wassermann test should be done on all donors. It would be easy for a medical officer of health to get a tested stock and to inform practitioners in his district that it was there for trial. Pooled adult serum would be worth trying in the absence of convalescents. The only work of real promise that he had seen was that of Tunnicliff, but it had not yet been widely confirmed. Her antitoxin was being tried, but contradictory reports were coming in, and it was very difficult in practice to get satisfactory results from such an investigation.

Dr. J. D. ROLLESTON referred to the grave mishaps in connexion with toxin-antitoxin treatment, but said he knew of only three deaths with serum and one case of tuberculous infection of the wound. He thought the difficulty of getting the serum had been insufficiently emphasised. He had tried the Tunnicliff serum on 12 cases, but the results had not been conclusive; some patients escaped infection, some had mild and some abortive attacks, but these occurred in untreated cases. Dr. O'Brien's cases did not therefore mean much. The Degkwitz serum had been a universal failure and caused severe serum disease without protecting from measles. In his recent monograph Debré had described the production of active immunity by injection of very dilute solutions of virulent measles blood. He did not think immunisation necessary on a large scale; it was not needed in better class families, and in his experience measles was almost always a mild disease when it broke out in hospital wards.

Dr. A. S. MACNALTY spoke of the difficulty of getting donors; in the recent outbreak of poliomyelitis he had completely failed to obtain any donors for immunisation purposes. Dr. Copeman's scheme would have to be correlated with existing measures, particularly those for nursing and the prevention of complications. In French experience measles had not been a mild disease in hospitals.

Fleet-Surgeon W. E. HOME referred to an investigation on the American Army in Texas in 1915, where measles had been regarded as a respiratory disease, with a rash as sequela, and treated by increasing ventilation and by airing the bedding and clothing. Among 12,000 well-disciplined troops who obeyed orders the incidence-rate had been 30 per 1000; among two or three thousand notoriously slack troops the rate had been 130 per 1000. The significance of the respiratory part of the disease might explain why it was mild in hospitals.

Dr. M. B. ARNOLD wondered why it was that measles and whooping-cough had been omitted from the list of notifiable diseases when the Act was formulated. It was interesting to see how the mortality of the diseases included in the list had decreased, compared with measles, influenza, and whooping-cough.

Dr. GRAHAM FORBES hoped that Dr. Copeman's inquiries would result in a clear lead for public health authorities. School closure had not been the method of dealing with measles epidemics since 1902, when a careful inquiry had been conducted at Woolwich, and it had been found that the exclusion of unprotected children was a better method. Two or three years ago a further scheme of coöperation between school nurses, teachers, attendance officers, and medical officers of health had been inaugurated, and this very complete system had borne fruit in a diminished mortality. In the quinquennial period 1911–15 the mortality had been 9500; in the next five years 5800, and, in the years since 1922, 3800. This efficient organisation for controlling measles in schools would be available for use if sero-attenuation offered itself as a help to the present system.

Dr. A. M. LEATHEM described a small experiment with Degkwitz serum carried out by the Medical Research Council, but cut short on account of the alarm caused by reports of serum disease. Further work was to be done on monkeys in the autumn.

Dr. CLARK TROTTER emphasised the importance of nursing and care. He described the severe measles contracted by a Newfoundland regiment.

Dr. STELLA CHURCHILL said that during an epidemic in Bermondsey 16 children out of 40 died in the local infirmary, while those who were nursed at home did better. One way in which practitioners could help was by insisting on proper nursing in the home; parents would not keep children in bed for measles if left to themselves. She thought there would be great difficulty in persuading the public to submit to any more inoculation methods.

Dr. T. S. MCINTOSH said that measles and whooping-cough were the two diseases in which there could be no question that artificial immunisation was a satisfactory thing. It was questionable in other diseases which many people managed to escape altogether. Seroattenuation produced a controlled natural immunity, which, there was good reason to believe, was better than an artificial immunity. Better still was the immunity of a natural attack, and the best method was to let children get the disease and reduce the mortality. As long as human serum was the only method, immunisation would not be of much practical value. He asked whether the immunity proposed by Dr. Copeman was to be active or passive.

Dr. W. S. C. COPEMAN, in reply, said that active or passive immunity depended on many factors. Seroattenuation was the only practicable method in an epidemic, but it was also desirable because passive immunity lasted only a few weeks. Weakly children could be made passively immune and take their chance of getting active immunity during the next epidemic. He had no intention of supplanting present methods; all the organisation he proposed was working at Woolwich, which merely needed serum to complete his scheme. The scheme was, of course, voluntary, and presumably parents would give their own blood to immunise their children. If the mortality were halved by good nursing it would still be 10 per cent, and that was higher than the mortality from scarlet fever, for which there was an elaborate scheme in force. He had not had difficulty in getting donors. The Debré phenomenon provided a rough method of testing the value of sera.

## ROYAL SOCIETY OF MEDICINE: SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

A MEETING of this Section was held on May 27th, when Dr. J. D. ROLLESTON gave a presidential address on the Section and Its Work from 1908 to 1926. The Society for the Study of Disease in Children, founded in 1900, was, he said, incorporated in 1908 in the Royal Society of Medicine, which then consisted of 13 sections. At the present time the Section ranked sixth in the number of its members among the 24 sections of the Society. During the war it had been forced to diminish its activities. The number of meetings in the session was reduced from eight in 1913–14 to five in 1914–15 and four in 1915–16; no special discussions were held; the provincial meetings were suspended, and owing to the paper shortage the number of pages allotted to the sectional proceedings was considerably curtailed. England, however, appeared to be the only belligerent country in which pædiatric meetings were held regularly during the war.

The President then reviewed the work of the Section under the three headings of (placed in order of importance) special discussions, exhibition of cases and specimens, and short papers.

The attention of British pædiatrists had, he said, first been called to the following conditions by their exhibition at the Section: renal infantilism, blue sclerotics and brittle bones, treatment of congenital syphilis by salvarsan, Calvé's pseudo-coxalgia, mitral dwarfism, lipodystrophia progressiva, Köhler's disease, œsophagectasis, and the "pink disease." He deplored the fact that so few pathological specimens had been shown at the ordinary meetings of the Section. This had been particularly noticeable since the war.

In conclusion, the President suggested (1) that at least one meeting in each session should be devoted to a special subject illustrated by clinical cases; (2) that surgical members should be urged to exhibit more cases; (3) that the exhibition of cases or specimens and communication of short papers relating to acute infectious diseases should be encouraged; (4) that more pathological specimens should be brought before the Section.

## MEDICO-LEGAL SOCIETY

A MEETING of this Society was held on May 26th, Dr. A. S. WOODWARK, the President, in the chair. Sir G. LENTHAL CHEATLE opened a discussion on some

*Medico-legal Aspects of Fracture of Bone.*

There was a fallacious idea, he said, that bones did not attempt to unite until about the fourteenth day after the fracture, whereas, in fact, there was no interval between the injury and the attempt to heal. In spite of great differences in longevity, the bones of all animals took about the same time to heal. He went on to discuss the evidential value of X ray photographs. In a certain dispute about the length of a fractured bone, two X ray photographs taken on different days were compared in court. For a comparison of X ray photographs to be of any value, however, as far as measurement was concerned, the light, the plate, and the patient had all to be in precisely the same position. When an operation had intervened between the two exposures it was quite impossible for the second photograph to repeat the precise relationship of these three factors. Any measurement between X ray photographs taken at different times was, therefore, useless. If the light were not absolutely at right angles to the bone the shadow would be lengthened. It was possible to make a difference of three to four inches by thus altering the angle of the light.

Dr. MORGAN FINUCANE remarked that the treatment of fractures and surgical injuries had been completely revolutionised. In the old days fractures were kept immobile and movements were utilised late, and he wondered if the new methods were responsible for the comparatively large numbers of ununited fractures reported nowadays. He had had recent experience under the Workmen's Compensation Act of the deformities resulting from the too early removal of splints and too vigorous massage. These deformities were extremely important from the point of view of compensation because, although the patient might recover sufficiently for the employer to call him "fit for work," he would be relegated to light work and so rapidly pass into the ranks of the unemployed. He agreed that facts might easily be misinterpreted if X ray photographs were not taken under ideal conditions. Modern methods of team work in diagnosis had the disadvantage that the diagnostic training of the student was apt to be neglected, the general practitioner being reduced to a machine, and his value depreciated in the public eye. In his opinion far too much significance, and erroneous significance, was attached to X ray photography in diagnosis and, still more, in prognosis. The ability of the rich to produce radiographic evidence was apt to be a grave injustice to the poor.

Dr. B. O'CONNOR recalled his association with Lord Lister in the old Edinburgh Infirmary in 1870, and claimed the honour of having been the first person to demonstrate in a London hospital Lister's methods of treating surgical wounds. Six weeks had then been generally considered to be the time necessary for a fractured bone to acquire some degree of firmness. Modern practice, so far as he knew, did not neglect the conditions under which healing took place. He agreed that X rays were put to a good deal of misuse. If lay people knew what X rays showed, well and good; but they were simply told by an expert that certain shadows meant certain things which they did not understand, and then they expressed opinions about a subject of which they knew nothing.

Dr. G. SLOT referred to cases of habitual fracture. Not many cases of ununited fracture were seen nowadays in hospitals, he said, and when they did occur it was often because the patients themselves had tampered with their splints. Many bad results were due to the neglect of patients to follow instructions. Massage was of great help to surgeons. The two great medico-legal difficulties connected with fractures were (1) the difficulty in country practice of getting an X ray examination, and (2) the difficulty of assessing the exact amount of pain that a patient felt. Then there was the important question of arthritis—how far the fracture caused it. Lastly, some fractures, especially those at the ankle, often occurred as sequelæ to an accident, and not at the time of the accident itself.

Dr. KNYVETT GORDON said that nobody could tell how long a given fracture would take to heal. It depended on the calcium metabolism of the individual, which in turn depended on various factors not easily estimated.

The PRESIDENT remarked that some judges forbade X ray photographs to be produced by anyone but the person who had taken them. This was a very important ruling, and one calculated to serve the ends of justice. He spoke of the frequency with which radiologists gave conflicting evidence about the same pictures. Many things could be read in X ray photographs. The exact length of time it took a fractured bone to unite depended on factors of personal health, heredity, and the like. The legal aspect of fractures did not end with union; if a joint were involved it was necessary to consider the man's capacity for work afterwards.

Sir LENTHAL CHEATLE, replying, said that if a fracture did not unite within a reasonable time it had generally been treated badly. He thought that a fracture healed most quickly if the limb were massaged and not moved. Immobility and massage were not incompatible.

# Reviews and Notices of Books.

## AN OUTLINE OF ABNORMAL PSYCHOLOGY.

By WILLIAM MCDOUGALL, M.B., F.R.S., Professor of Psychology in Harvard College. London: Methuen and Co., Ltd. 1926. Pp. 572. 15s.

THE publication of a book by Prof. William McDougall is an important event in the history of psychology. He takes his place among the few great writers in this science, not only by reason of his widely-ranging intuition, his clear incisive mind, and his genius for the practical application of what both these qualities teach him, but also because he can express himself in intelligible language. The most formidable hindrance to the propagation of the doctrines of modern psychology has always been the failure of its exponents to make people understand what they are talking about. Prof. McDougall is gifted with the power to interpret for English-speaking readers both what he has made out of the teaching of other pioneers and what he has added to it from his own study and reflection. A few years ago, in his "Outline of Psychology," he gave the world an interpretation of the laws which govern the normal psychology of the human mind. Now he extends his field to the consideration of mental disease, in a twin volume to the first, the two forming one complete treatise. He has therefore taken an important step towards bridging the gulf between academic or speculative psychology, and abnormal or pathological psychology—the gulf between what ought to be and what is. For no man is wholly sane or normal, and the knowledge of what ought to be is futile unless balanced by the patient and humble study of the ills which afflict in varying measure the mind of every man. Hitherto the gap has remained practically uncrossed. The academic psychologists have concentrated on their laboratory experiments and the physicians on mental disease. Freud's great essays in psychopathology merely made the dissension triangular, for he neglected not only academic psychology on the one hand, but also the proven facts of neurophysiology on the other. Prof. McDougall has here made a splendid attempt to bridge all three chasms, and no one could have better qualifications for the work of which this book is the expression and the fruit. Prof. McDougall is nearer to earth than Jung, but less rigidly mechanistic than Janet. Holding the "dynamic" view of psychology, he believes in a force which manifests itself in behaviour, but, unlike the mechanists, he maintains the conative essence of this force. All behaviour is, for him, directed towards an end. The sources of power are the instincts, its channel the emotions, and its emotional-conative activity colours every event in mental life, even the most purely intellectual. We are not, however, simply machines. The structure of our minds has something in common with that of a complicated machine, but the machine has a controller, a driver, in the conscious self. This "self" Prof. McDougall wisely does not attempt to reduce; he leaves it as the lowest common denominator of the whole problem of life, as it has always been left in every metaphysic. Of its existence he has no doubt; he is therefore sharply defined as an autist.

It is not until the end of his book that we reach the definite statement of what he conceives to be the nature of human personality, which he holds to be not simple, but multiple. Every activity of the body and mind is presided over by a distinct personality, a "monad," which works to a definite purpose. The mind is not a machine, with different parts, but a hierarchy consisting of an incalculable number of members, all related to one another in various kinds of function or degrees of command and submission, but all subject ultimately to the self, the conscious monad. Every monad has its sentiments and ideas, every monad draws power from the instincts and lives its own life, but the conscious self, fed by all the instincts and motivated by the self-regarding sentiment, is by nature intended to be the king of them all. Functional disorder is the inability of a monad or monads to carry out their work efficiently, or the dissociation of a number of monads from the community, or the failure of the self to regulate the kingdom. Schizophrenia, the psychological basis of dementia præcox, occurs when the kingdom has never been properly integrated by the formation of an adequately strong sentiment of self-regard. This conception enormously simplifies much that has hitherto remained obscure.

Prof. McDougall covers the whole range of functional mental disorder, including even those conditions where the endocrine system is proved to have undergone some change, for he rightly holds that the two systems, glandular and nervous, react on one another to such an extent that the cause-effect relationship between them is indefinable in the present state of our knowledge. He classifies his disorders into two groups: those due to dissociation (hysteria) and those due to neurasthenia (anxiety, obsession). This agrees roughly with Kraepelin, and the association of the latter two, where Kraepelin distinguishes them, does not prejudice an accurate estimate of their nature. He recognises that schizophrenia is not in itself a neurosis, but a defect upon which a neurosis of nearly any kind may supervene. Of his attempts to bridge the gulf between neurology and psychopathology, perhaps the two most striking examples are his work on the extravert-introvert scale and his neurological mapping of the complex. Jung distinguishes between introverts and extraverts, but makes no attempt to explain the difference. McDougall says that every individual has a place somewhere on a scale, at one extremity of which is the ideal introvert and at the other the ideal extravert, and that life tends to push everyone towards the other extreme from that near which he starts. That the introvert has relatively low and the extravert relatively high synaptic resistance is shown by the difference in their reaction to various ocular tests. Alcohol, he finds, encourages extraversion and the alkaloids introversion. The extravert's brain is more liable to morbid dissociation than that of the introvert, because it is normally in that state of relative dissociation which the introvert's brain reaches under alcohol. The position of any subject in the scale is a function of some quite general property of his nervous system and is probably determined by "some chemical influence like that of a hormone or endocrine secretion, or some complex chemical resultant of the general metabolism." The neural scheme of the complex is a masterpiece of inductive thought, and postulates what amounts to the short-circuit of a given system of cognitive cortical dispositions away from all other systems.

It is possible to criticise a work of this magnitude and authority only with the greatest diffidence. The bias of the author's interest is on the side of the dissociative disorders, and this has led him to allot a large amount of space to their discussion and to the description and consideration of hypnosis, which he regards as one of the most valuable means to the experimental study of the mind. But he has allowed his chapters on hypnosis and suggestion to become separated from those on alternating and multiple personalities, which is rather confusing for the student. It is a pity, also, that he has to confess himself unable to follow Jung's type-classification, which has simplified psychology for so many people. A graver defect is that far too much space is occupied with destructive criticism of the views of Prof. Freud. An analysis of the Freudian teaching is an indispensable part of the book, but in thus condemning so many of the implications and inferences of the pan-sexual theory Prof. McDougall has gone too far to the other extreme, and unduly restricted his view of the scope of the sex-instinct in human motives. Nevertheless, the book provides an honest and clear-sighted review of the whole field of psychopathology, expressed in a medium of great power, persuasiveness, and lucidity.

### CLINICAL PHYSIOLOGY.

By R. J. S. MCDOWALL, D.Sc., M.B., F.R.C.P. Edin., Professor of Physiology, King's College, University of London. London: Edward Arnold and Co. 1927. Pp. 424. 21*s*.

THOSE whose study of physiology took place some years ago, whether they be senior students, practitioners, or consultants, should welcome Prof. McDowall's book. For he covers an enormous subject with a simplicity of language and with such thoroughness that the clinician will find interest in numerous chapters whatever may be his particular bent. It is inevitable that such a work should be uneven, and if we would cite the chapters dealing with the circulation, special senses, and nervous system as being of especial excellence, it is but right to point out that those dealing with the kidney and the endocrine glands are of a lower standard. The foreword by Prof. Halliburton, in which he extols the value of physiology to the physician, very rightly indicates the value of the book as a whole.

### PHYSIOLOGY AND PATHOLOGY.

*Traité de Physiologie Normale et Pathologique.* Edited by G. H. ROGER. Vol. VII., Blood, Lymph, Immunity. Paris: Masson et Cie. 1926. Pp. 502. Fr.65.

THE energy of Prof. Roger is inexhaustible. He has organised the production of a great work by many authors in 11 volumes which shall survey physiology in a most catholic fashion, taking into its view invertebrates at one end of the scale and sick persons at the other. It is intended to be a book which shall secure that the doctor's work is founded on a broad biological foundation and that the biologist shall know something of the valuable lessons which practical medicine has to teach him. Such an ideal cannot, of course, be fully realised on earth, but judging from the present volume the work will be of use and interest and well worth reading, if only because the French points of view differ in such a salutary way from those to which we are accustomed. The most notable sections in this instalment are those by J. Bordet (95 pp.) on immunity antigens and antibodies which is a first-rate summary of the mature views of a master, and by Ch. Achard (56 pp.) on tissue fluid or, in the convenient French terminology, the "système lacunaire." Transfusion and its indications are dealt with by P. Emile-Weil, and L. Cuénot describes the respiratory proteids of the invertebrates. The rest of the blood is discussed by J. Jolly and others, and there is a special section on hæmorrhage; the general level of this series of articles is not particularly high. Other chapters cover lymph and lymphatic glands, and A. Besredka discusses anaphylaxis along lines which he has made familiar.

### PHYSIOLOGY AND THE SURGICAL TREATMENT OF PAIN.

*Die Leitungsbahnen des Schmerzgefühls und die chirurgische Behandlung der Schmerzzustände.* By Prof. Dr. O. FOERSTER, Breslau. Berlin and Vienna: Urban and Schwarzenberg. 1927. With 104 illustrations. Pp. 360. M.19.50.

AMONG the select company of neurological surgeons Prof. Foerster of Breslau holds an honoured place, gained not merely by his clinical experience but by his able researches as a physiologist and experimentalist. These he brings into contribution in this noteworthy monograph on the physiology of pain and its surgical treatment.

Possibly the most interesting section deals with the nature of pain and its physiological correlates. A careful review of the problem reveals not a few questions in respect of which finality is far from having been reached, notably that of the possible interassociation of the vascular system with the sensation of pain. The author here adduces fresh evidence in favour of such a connexion, to which the neurologist would do well to attend. A minute study is also made of the phenomenon of hyperpathia, by which is signified an appreciation of pain in consciousness altogether disproportionate to the stimuli originally arousing that sensation. Next, the anatomical basis of pain-conduction is subjected to a most detailed scrutiny, and various gaps in our knowledge are pointed out. Data derived from clinical medicine and surgery are underlined as suggesting that some impressions concerned with the appreciation of pain pursue a somewhat devious route by the sympathetic chain before entering the cord at high levels, and an interesting study is made of the possible differential diagnosis between root pains and posterior horn pains—a point of some practical importance. In the second part Prof. Foerster examines at great length the appropriate surgical treatment of such difficult problems as the visceral crises of tabes, visceral neuralgia in general, amputation neuromata, varieties of radiculitis, headache, and so on. In all of these he brings to bear for their solution a fine combination of physiological knowledge and clinical acumen, to which we may believe his technical skill will add in practice a component of value. There is food for thought in this scholarly contribution to the perennial topic of the successful treatment of painful conditions, and its appeal is unusually wide. It is just as meritorious for its suggestiveness and the sidelights it throws on still vexed problems as for its accomplishment.

### THE STUDENT WHO SMOKES.

By J. ROSSLYN EARP. London: H. K. Lewis and Co., Ltd. 1927. Pp. 61. 5*s*.

LAST year some £53,000,000 were added to our national receipts by our habit of smoking. Does taking tobacco do us any good—physically, mentally, or spiritually? Does it do us any harm? Dr. Earp has endeavoured to advance towards an answer to these very difficult questions by intensive study in a limited field, and has analysed the habits of the students at Antioch College, Ohio, in relation to their physical and intellectual performances. He subjects his data to critical statistical examination (the rationale of which he also explains for the uninitiated) and discusses them with a fairness and absence of bias which might with advantage be imitated in more pretentious works on social questions. One conclusion emerges quite clearly: that the habit of smoking is associated with inferior scholarship. He shows also that students who inhale are inferior to those who smoke less thoroughly. Apart from this piece of evidence, there seem to be no satisfactory grounds for choosing between the alternatives that scholastic inferiority is due to smoking, that smoking is due to scholastic inferiority, and that both are due to the nature of the individual. The only thing to be done is to try experiments on a large scale; we hope this will be achieved.

### FERMENTATION.

*Le Problème des Fermentations:* Les faits et les hypothèses. By M. SCHOEN, Chef de laboratoire à l'Institut Pasteur. Paris: Masson et Cie. 1926. Pp. 199. 3*s*.

THE problem of fermentations, as M. Schoen points out, is of unceasing interest, and although so many papers have been written on the subject by leading workers in the field of biological chemistry, a vast area still remains open for investigation. M. Schoen reviews the work which has already been done on this problem; unfortunately, however, his monograph contains more hypotheses than facts. He opens with an account of the main points of Pasteur's work and shows how his theory that fermentation is the result of life without free oxygen, and that, besides the two principal products of fermentation, alcohol and carbonic acid, glycerine and succinic acid are also formed, has been confirmed by experiments. The monograph proceeds to consider chiefly alcoholic

fermentation, but bacterial fermentation is not neglected, and the author shows how the different types of fermentation are united.

The book forms a useful review of the work on the subject; as Prof. Fernbach says in the preface, to keep in touch with continuous scientific developments it is necessary from time to time to look back on the work already covered, and M. Schoen's monograph will, therefore, be of service to those who are interested in the question of fermentation from any aspect.

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DRUGS AFFECTING THE HIGHER BRAIN CENTRES.

*Phantastica: die betäubenden und erregenden Genussmittel.* Second enlarged edition. By Prof. Dr. L. LEWIN. Berlin: Georg Stilke. 1927. Pp. 465.

THE main title of this book can convey nothing to English ears, and the subtitle, though more suggestive, is difficult to translate satisfactorily. The book itself, however, has well-defined limits. It treats on all drugs that affect the higher brain centres, whether these drugs be taken for medicinal purposes or for pleasure. Morphia, cocaine, Indian hemp, alcohol, hypnotics, camphor, caffeine, and tobacco, with their parent drugs and their derivatives, are discussed at length, as well as many less known drugs with similar actions. The book deals, then, with habit-forming drugs; it is largely a warning against the use of such drugs, and depicts in ghastly colours the results of drug addiction. The work is written in popular terms as a further subtitle "für Ärzte und Nichtärzte" suggests; neither the medical nor the psychological side of drug addiction is treated in a deeply scientific manner, but there is much interest in the history of the drugs, in the comparison of modes of use and of symptoms, and in the accounts of drugs used in savage countries and those used for similar purposes in civilised lands. The series of substances dealt with vary widely in action, but are connected to form a well-defined group; the use and abuse of members of this group afford one of the great problems of modern times, and a comprehensive work of this kind has therefore a real interest.

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TEXT-BOOK OF MATERIA MEDICA FOR NURSES.

Eighth edition. By LAVINIA L. DOCK, R.N., and JENNIE C. QUIMBY, R.N. London and New York: G. P. Putnam's Sons. 1927. Pp. 317. 7*s.* 6*d.*

THE subject of materia medica is evidently taught to nurses in America in far greater detail than in this country. We should be happy if the medical student knew all that is in this book. Its general arrangement is according to the drugs acting on different systems of the body; there are also notes on drugs generally, poisons, chemistry, physiotherapy, laws relating to dangerous drugs, watering-places. Most of the matter written under these headings is clear and good. The dose of cocaine, 2 gr., given on p. 40, seems high; the doses of tuberculin apparently intended to represent the apothecaries' and the metric system—namely, 1/250–1/65 gr. and ¼–1 c.cm.—do not seem to correspond. Though most of the pictures are good we should certainly fail to recognise poppy and monkshood from the prints given. Many of the European watering-places mentioned are of small importance. Generally, the book is well expressed, neatly published, and quite interesting.

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# New Inventions.

## AN ELECTRIC STERILISER FOR URETERAL CATHETERS.

THE steriliser consists of a circular box, 7 inches in diameter and 2 inches deep, with hinged lid. A small container for formalin tablets is fixed to the centre of the base of the box. It has an air-tight lid, which is held in position by means of a winged nut, and an inlet for compressed air which terminates on the outside of the box in a valve. Two electric heaters lie immediately below the formalin container. They are wired up to a special plug fitting in the side of the box. This plug can be connected to the ordinary domestic electric supply, and either direct current or alternating current can be used. Surrounding the formalin container is an annular tray on which the catheters rest. Below the tray are racks for holding a 10 c.cm. Record syringe, spare metal caps, and a wire for cleaning the catheter nozzles, all of which are sterilised by means of the formalin vapour. The lid of the formalin container is furnished with four metal nozzles, to which the catheters are attached by means of adjustable connexions. Each catheter is inserted, before sterilising, into a rubber tube, long enough to enclose it completely. The end of the tube where the eye of the catheter lies is closed by a wooden peg. The proximal end of the catheter is then attached to the nozzle on the lid of the formalin container by means of the adjustable connecting piece and the apparatus is then closed and connected to lamp socket or wall plug. When the current has been turned on for 20 minutes and the formalin vapour well liberated from the tablets, air is pumped into the formalin chamber through the valve in the side of the steriliser. It forces the hot concentrated formalin vapour through the lumen of the catheter, down to its eye. From this point it must travel backwards between the catheter and the rubber tube before it can escape into the body of the steriliser. It has been found experimentally that catheters infected with non-sporing organisms (*Bacillus coli*, staphylococci, and streptococci) are sterilised even when air has not been pumped through the steriliser, but to kill the spores of the *Bacillus subtilis* it was necessary

to increase the force and volume of the current of formalin vapour through the catheter by means of the air pump.

This apparatus has been made for me by the Genito-Urinary Manufacturing Co., Ltd., 64, Great Portland-street, London, W.

J. SWIFT JOLY, F.R.C.S.

# THE LANCET.

*LONDON, SATURDAY, JUNE 4, 1927.*


## ROYAL COLLEGE OF SURGEONS OF ENGLAND: POSITION OF THE MEMBERS.

THE direct representation of Members on the Council of the Royal College of Surgeons of England, which has been advocated steadily for years in these columns, is forming the subject of an investigation by the Council, who have invited from the Fellows an expression of individual opinion. The views of the Members have been registered clearly and frequently in the press, and at general meetings of the Fellows and Members. Those engaged actively in promoting the direct representation of Members on the Council may not form a large numerical proportion of the Members, but the recognition by the Council that this fact provides no valid argument for a refusal of discussion will be welcomed as fair and statesmanlike. The protagonists of a real movement are often few in number, but, if the movement is real, they speak and act, at least equally often, for large numbers who will benefit by any success which may attend their efforts. In many discussions of the arguments for reform ranging over three-quarters of a century, we have had to record maladroit handling of the different situations as they arose, both by the friends and the enemies of the constitutional change which is sought. We have now a new situation; for the first time the move comes from the central authority of the College.

About 30 years ago a majority of the existing Council had expressed themselves in a greater or less degree, privately or publicly, as well-disposed to the views placed before them by both Members and Fellows for extending the rights of the Members. But benevolent intentions are prone to disappear partly as the results of further reflection, and more often—and also more creditably—help that has been promised falls away when the champions of the change are unable to formulate a scheme by which their objects can be obtained in a practical way. A discovery of the method is still awaited by which representation of the Members on the Council can be brought about without undue disturbance of the functions of the College, as set out in the charters—namely, to promote the science of surgery and encourage in academic and professional ways its methods of practice. Many declarations have been heard and have been received with sympathy and applause, to the effect that it is anomalous in these days for a corporation to be governed without reference to the majority of those who form it; but so far the concrete suggestions for altering the position have been unable to survive criticism. It is legitimate to hope for a different result from the present action of the Council in asking the Fellows, who have elected them to their seats, for a definite expression of opinion, especially because the Council has placed before the Fellows a detailed statement of the situation. That non-possumus attitude has gone which was founded on the assumption that, because only a few Members voiced any demand for the right to vote, an inquiry into the justice of the demand was unnecessary, while the Fellows will be dealing with the matter after being furnished with the basis for forming their judgments.

The statement placed before the Fellows commences with a brief historical sketch of the incorporation of the College, of the granting of its charters, and of its functions; it then sets out the financial arrangements made with the Royal College of Physicians of London for a Joint Examining Board, and details the rights and privileges of the Members and Fellows as at present enjoyed. Here it is indicated that the positions of both are identical, save in the important matters that the Fellows vote at the election of members of the Council; they only are eligible to sit on that Council; and they only can be members of the Court of Examiners, or appointed examiners in anatomy for the Fellowship of the College and in the surgical section of the Board of Examiners in Dental Surgery. There follows an enumeration of the claims of the members, as put forward since the institution of the annual meeting of Fellows and Members in 1885, from which date resolutions have been passed almost every year in favour of giving Members some form of direct representation on the Council. The list of claims is published with the remarks of the Council directed to the substance of each claim appended. Some of the statements which have been repeatedly made in behalf of the Members are to some extent traversed by the Council; especially is it brought forward that the majority of the Fellows taking part in the elections of the Council are themselves in general practice, so that the interests of Members who are in general practice may be taken to receive the care of the Council, as far as the charters empower the College to promote such interests. It will be unfortunate if the statement of the Council to the Fellows is regarded by the Members as an adverse prejudgment of their claims, just as it will be unfortunate if the Fellows of the College resolve to give their votes without looking at all the circumstances. It may be that some parts of a strong demand for reform have no historic basis or have been made the subject of exaggerated dialectics, but these are not things which should determine inaction. Opportunities of progress must not be sacrificed out of any considerations of precedent. We hope that the vote of the Fellows will be a large one, and that the result will be a working scheme for the effecting of the change that is sought. The difficulties of producing such a scheme will be many and far-reaching, but they will not be insuperable if the Council receives a clear instruction from the Fellows to proceed.

## LEGAL LIABILITY IN CERTIFYING INSANITY.

Two judgments of particular concern to the medical profession were given on May 27th, both relating to the legal liability of a practitioner to be sued for alleged negligence in certifying a patient to be a lunatic. The first in importance was the final decision of the House of Lords in the protracted litigation of Harnett *v.* Fisher, whereby Dr. FISHER succeeds, and the previous judgments in his favour by Mr. Justice HORRIDGE and the Court of Appeal are reaffirmed. The second case was that in which the jury gave Mrs. DE FREVILLE a verdict of £50 damages in her action against Dr. A. V. DILL. Certain legal points remain to be argued here in the light of the review of the law by the House of Lords in Harnett *v.* Fisher; Dr. DILL has lost upon the issue of fact, but the comparatively small amount of damages awarded is significant; the main interest of the case is the sympathetic understanding of the practitioner's difficulties in lunacy matters which is revealed in Mr. Justice MCCARDIE'S summing-up to the jury.

The legal issue in Harnett *v.* Fisher is well known. Mr. HARNETT, who argued his appeal in person and well, was certified to be a lunatic on Nov. 10th, 1912. He issued a writ on May 31st, 1922, with the result that he was awarded £500 damages, the jury finding that he was not of unsound mind when certified and that Dr. FISHER had not acted with reasonable care in certifying him. But there was one objection to this result which proved fatal to Mr. HARNETT'S claim. The Statute of Limitations, passed more than three centuries ago, enacts that an action of this kind must be begun within six years of the existence of the cause of action. The object of the Act, as Lord SUMNER observed, is to protect defendants against belated claims—not merely defendants who have a good defence and to that extent need no protection, but also defendants who have not a sufficient answer or who, owing to lapse of time, cannot count on making it. Mr. HARNETT'S action was statute-barred; he had not begun it within the six-years time-limit. It is true that the statute contains an exception in favour of persons who are under a disability and specifically names amongst these any person who is *non compos mentis*. Mr. HARNETT, however, could not bring himself within this exception. It had been of the essence of his claim, and the jury had found in his favour, that on the day when Dr. FISHER certified him he was of sound mind; it was not established that he had ever been otherwise. If he had never been *non compos mentis*, then the six-year time-limit ran from Nov. 10th, 1912, and his action, begun too late by several years, must fail. Mr. HARNETT argued that, under and for the purposes of the Lunacy Act, he had been made a lunatic and was treated accordingly, both in person and property, and that, for the purposes of bringing an action, he was as much disabled as if he had in fact been *non compos mentis*. He urged that the statute should be liberally interpreted so that his practical disability should be deemed a disability under the Act. Against this argument it could have been said that, about a month after the reception order was signed, Mr. HARNETT was allowed to leave the asylum provisionally and was actually at large for two days; moreover, after his return he frequently communicated with his solicitor and occasionally saw him personally. But the House of Lords brushed these considerations aside. The question was not one of Mr. HARNETT'S status as a lunatic, but of his mental condition of sanity or insanity, and this point had been finally disposed of by the jury's verdict in his favour. The House of Lords was not concerned to justify what Parliament had enacted in 1623, or to regret that it had gone no further to assist persons in Mr. HARNETT'S situation. The tribunal had merely to interpret the law, and on that interpretation Mr. HARNETT could not succeed.

There remained one subsidiary point which is important to all practitioners who find themselves in Dr. FISHER'S position. During the argument on March 3rd Lord BLANESBURGH suggested that the wrong statutory limitation had been relied upon by Dr. FISHER. His lordship remarked that possibly the Jacobean statute of 1623 had nothing to do with the matter. Section 331 of the Lunacy Act of 1890 prescribed a special period of limitation in the case of an action under Section 330, and that period was one year after release. On this hypothesis Mr. HARNETT'S action was not time-barred, as it was begun seven months after he regained his liberty. It was true that Section 331 of the Lunacy Act was repealed by the Public Authorities Protection Act of 1893, and there was some question of the absolute extent of the repeal. Assuming that the repeal was complete, then the law applicable was the Public Authorities Protection Act which prescribes a special time-limit of six months, and again the result was that Mr. HARNETT was out of time. Lord BLANESBURGH referred to this point in his judgment on May 27th, in which he reached the same conclusion as the other members of the tribunal, but by a different line of reasoning. The House of Lords allowed Dr. FISHER to amend his defence so as to plead the Public Authorities Protection Act of 1893 as well as the statute of James. He thus had two strings to his bow. Lord SUMNER, however, and others of their lordships disagreed with Lord BLANESBURGH and regarded the 1893 Act as inapplicable, the Act of 1623 being the Act which really applied. The reasoning here deserves close study. The Public Authorities Protection Act applies to actions brought for doing, or neglecting to do, an act under any statute of the kind described—in Dr. FISHER'S case the Lunacy Act. The only act by Dr. FISHER of this nature was the signing of the certificate in the prescribed form. But, said Lord SUMNER, the gist of Mr. HARNETT'S claim was not the signing of the prescribed certificate, but the alleged lack of care in examining his mental state and in forming an adverse opinion about it. The negligence could only arise in that connexion; it was breach of a common law duty, not breach of a statutory duty; the negligence, if any, was that of a medical practitioner acting in the course of his private practice. Anything else was either a separate cause of action under the Lunacy Act for which no damage could be recovered, since the detention order was the order of the justice and not of the doctor, or else it was a mere item in the damages claimed as flowing from the negligence. This view expressed by Lord SUMNER usefully underlines the judicial responsibility of the magistrate which is by statute interposed between the alleged lunatic and the certifying doctor; but the implications of the argument are far-reaching. It makes a considerable difference to the practitioner whether he is protected by a time-limit of six years or by one of only six months. Great interest will therefore attach to any further explanation of the legal position which may be forthcoming if Mr. Justice MCCARDIE is asked to consider the application of Harnett *v.* Fisher to the case of de Freville *v.* Dill.

If Parliament contemplates any change of the law of medical liability in the certifying of insanity, it will no doubt be contended that Mr. HARNETT was unfairly treated in receiving all the practical disabilities of the status of lunacy and yet being debarred from any legal concession. At the same time our legislators must not forget what Mr. Justice MCCARDIE has been saying to the jury in the action against Dr. DILL. Litigation of this kind has not been infrequent in recent years, and medical men may decline to give certificates if they thereby become subject to actions in the law courts and are embroiled in embittered family strife with which they have no concern. It is a serious matter, said the learned judge, that the Lunacy Acts contain no definition whatever of insanity, unsoundness of mind or lunacy; they provide no test, they set no standard, and they give no guidance. The keynote is first the welfare of the patient, and secondly the public safety which may require that the patient be put under care and treatment. "A doctor who is called in to deal with an alleged lunatic is dealing with the most difficult subject known to the medical profession; the forms taken by unsoundness of mind are so many, diagnosis and classification are difficult, and not only do the forms and symptoms vary, but each varies in degree, in

gravity, and intensity; symptoms and outbreaks may be intermittent and may vary year by year, month by month, and day by day." Some observations by Lord HALDANE in Everett *v.* Griffiths were opportunely quoted:—

"To-day he is sane in his conduct and probably was so very soon after the occurrences in question. But the point is whether at the time of those occurrences he had so lost his capacity for self-control as to be, temporarily at least, to all appearance of unsound mind within the meaning of a statute which takes account of his relations to others as well as to himself."

The jury, added Mr. Justice MCCARDIE, must remember the Lunacy Acts have to be administered, and certificates have to be given, not only by London specialists and other experienced practitioners in great cities, but also often by ordinary country doctors. It is one thing to come to a decision upon the accuracy of certification after a seven days' hearing in court with evidence on both sides and the assistance of experts and counsel; it is another thing to come to a decision in a room in a country vicarage. "A general medical practitioner gives no warranty of special skill or knowledge; he is bound to exercise due care, having regard to the skill and knowledge which he actually possesses." Fortunately, in Mrs. DE FREVILLE'S case against Dr. DILL any suggestions of bad faith that might have been made against the defendant were withdrawn before the case was left to the jury. The mere fact that such suggestions can occur will make medical practitioners the more reluctant to run the risks of undertaking certification under the Lunacy Act unless the medical profession is to be assured of a reasonable immunity under the law.

## THE INTER-STATE ASSEMBLY.

THE Inter-State Post-Graduate Assembly of North America have held their annual congress in London this week. The session was opened with addresses by the Marquis of READING and Lord DAWSON OF PENN, and as will have been gathered from the announcements last week of the various functions, the visiting doctors from the States and from the Dominion of Canada have been offered in London large facilities for a post-graduate gathering. Our medical organisations and institutions have coöperated to welcome the visitors from scientific and social aspects alike. The lectures delivered during Wednesday, Thursday, and Friday (to-day) at Dartmouth House, Charles-street, the headquarters of the English-Speaking Union, were representative of British practice to-day in medicine and surgery, and the opportunities afforded to the members of the Congress for seeing the theories exemplified and the techniques practised at the metropolitan hospitals have been numerous. On each day special programmes have been arranged, to be carried out at many of our best known general and special institutions, where the staffs have attended to give appropriate demonstrations, while the range of operations performed for the instruction of the audiences was large and instructive. The importance of these gatherings is, of course, proportional to the number of those who attend, having before them the great object of scientific coöperation. The attendances at receptions and the inspection at museums and collections should be treated as agreeable interludes; the real business of these international assemblies is to prove that medicine knows no national confines, and that all its followers have something to learn from and something to teach to their colleagues.

# Annotations.

"Ne quid nimis."

## CREMATION.

THE Cremation Society of England, of which Prof. Chalmers Mitchell is chairman and Dr. H. T. Herring hon. secretary, is taking steps to popularise the practice of cremation in this country. Dr. Herring opened a discussion on the subject at the recent sessional meeting of the Royal Sanitary Institute held at Bath. At the Annual Conference of Cremation Authorities, held in Birmingham on May 25th, several speakers, including Principal C. Grant Robertson and Sir John Robertson emphasised the economic arguments in favour of cremation. The medical profession does not require to be convinced of the advantages of cremation on hygienic and æsthetic grounds, but the great cost to the community of earth burial is not sufficiently realised. An enormous area of land which is badly needed for building sites, allotments, food production, and recreation must be set apart for cemeteries. It is usually estimated that from a quarter to half an acre is required per 1000 inhabitants and that this suffices for only about 14 years; stated in another way, with a death-rate of 500,000 per annum, the area occupied for burial purposes would amount to 500 acres yearly in this country. The cost to the ratepayers amounts to hundreds of thousands of pounds a year, for most authorities have a considerable annual deficit on their cemeteries: in Sheffield the loss amounts to £6000 per annum, in Manchester to £5736, in Blackpool to £4411. A year ago Sir Kingsley Wood, in answer to a question in the House of Commons, stated that the total sum which local authorities in England have been authorised to borrow for the provision of cemeteries during the preceding period of seven and a half years was £1,248,905. The burden on the living increases in geometrical ratio, and before many years municipal authorities will be compelled to face the possibility of refusing facilities for burial. Experience abroad, notably in Switzerland and Czecho-Slovakia, shows that the practice of cremation, when recognised by the State, is accepted as a substitute for burial without question. Municipal crematoria are for the most part self-supporting and if cremation were widely adopted the individual expense would be greatly reduced.

The only serious argument against cremation is the alleged danger of destroying the evidence of crime in cases in which foul play may have caused death. Experience and authoritative opinion show that the argument has no substance. There are now 16 crematoria in England and Wales, and more than 37,000 cremations have taken place, yet in no case has any question subsequently arisen as to the cause of death. The stringent requirements which must be complied with before a body is cremated include the production of three statutory certificates and declarations, from the executor or nearest relative, the medical attendant, and an independent medical practitioner of standing. Dr. Herring has recently appealed to medical practitioners[1] generally to qualify for the position of granting this second certificate. Considerable powers are vested in the medical referee appointed by the Cremation Authority, who alone can give the order for cremation to take place. He is enjoined not to allow the cremation to proceed unless he is satisfied that the death has been duly registered by the production of a certificate of death, that the application and certificates are in order, that due inquiry has been made by the persons giving the certificates, and that the fact and cause of death have been definitely ascertained. In particular, if the cause of death given in the medical certificate is such as may be due to poisoning, violence or illegal operation, to privation or neglect, he shall require a post-mortem

[1] THE LANCET, May 14th, p. 1035.

examination to be held, and if that fails to reveal the cause of death shall decline to allow the cremation unless an inquest be held and a certificate given by the coroner. He may in any case decline to allow the cremation, and is not bound to state his reason for refusal. Lord Salvesen, who speaks with high judicial authority, considers these requirements so stringent as for all practical purposes to exclude the possibility of a body being cremated which has been the victim of foul play. "No person," he stated in his address at the Birmingham Conference, "who had been guilty of poisoning the deceased would ever resort to cremation as a means of concealing his crime. If he was in collusion with the medical attendant, or had managed to evade his suspicions, he would scarcely run the risk of an examination of the deceased by an absolutely independent official, who might report that a post-mortem examination was required to disclose adequately the cause of death and whose duty it is to set about inquiries which, if there had been foul play, would almost inevitably reveal any suspicious circumstances attending the death. Lastly, he would have to face the possibility of the medical referee requiring a post-mortem examination to be held, which in the case of mineral poisoning would at once reveal the cause of death." Contrasting these requirements with those for ordinary burial, he added: "A person who wished to conceal that the deceased person had perished from foul play would have no difficulty in many cases in obtaining a burial certificate, which . . . . affords a very inadequate safeguard against the body being put under the earth without the cause of death having been accurately ascertained."

At the present time, as the Registrar-General's figures show, some 5000 deaths a year are not certified by a registered medical practitioner at all, and in only about 40 per cent. of the cases of death certified have the medical men seen the body after death. Both the cause and the fact of death must be verified in every case before cremation is permitted.

## VOLUNTARY SEXUAL STERILISATION.

ADVANCED proposals for legalising voluntary eugenical sterilisation are set out in an article by Mr. H. H. Laughlin, of the Carnegie Institution of Washington, published in the *Eugenics Review* of April. The author logically points out that laws for sterilisation are a mere extension of the principle of statutes which authorise the segregation of the insane and feeble-minded in custodial institutions; that on the long view of racial aspects sterilisation is fully as important as segregation; that voluntary sterilisation, while it might well be encouraged, must be subject to some measure of social control to prevent abuses; and that there already exist analogous laws governing surgical operations under which abortion is prohibited except for therapeutic reasons. After tabulating the classes of defectives and others which should not be allowed to reproduce, and assigning in each class the responsibility for the initiative to prevent reproduction, Mr. Laughlin formulates a draft statute for the control of voluntary sterilisation. The main safeguards in his proposals are three. First there should be a signed and sworn statement by the particular subject (or, if the subject is under age or otherwise incompetent, by the subject's parent or guardian) testifying to the belief that he possesses hereditary qualities of which the propagation would tend to lower the inborn hereditary standards of the nation. Secondly, no surgeon is to operate for the purpose of sexual sterilisation unless he has been furnished with a second document signed and sworn by a licensed medical practitioner or by a trained biologist possessing approved qualifications, to the effect that the signatory has investigated the heredity of the particular subject and has found that he has hereditary qualities which, in the investigator's opinion, would tend to lower what have already been described as the inborn hereditary standards of the nation. Thirdly, the surgeon would be required to make a return as to the nature and date of the operation, the name of the patient, and the surgical and physiological result. All other sexual sterilisation by surgical or medical means would be prohibited except for therapeutical purposes as interpreted by established surgical or medical practice.

These proposals will have their value as propaganda to draw attention to eugenic ideals, but it is safe to predict that it will be a long while before an Act of this nature is found in the English statute-book. Recently a mild endeavour to secure the better segregation of defectives has been resisted in Parliament on the ground that it is a gross infraction of the liberty of the subject, and even on the further ground that it is an objectionable piece of class legislation. It is indeed doubtful whether this country is more ready to contemplate proposals for the control of voluntary sterilisation than to impose any form of compulsory sterilisation upon degenerates even after the most careful judicial and medical inquiry. We are still in some uncertainty as to the working of the laws in certain American States where compulsory sterilisation is authorised. Sterilisation does not destroy sexual impulse. It may even do harm by creating a false atmosphere of security in which defectives may be allowed at large when they should be segregated.

## METAL FUME FEVER.

THE occurrence of chills among brass-founders has long been known, and the name of "ague" given to these attacks denotes that they occurred in the Middle Ages when tertian and quartan fevers were indigenous, and the term was still current. Brass is an alloy containing about two parts of copper and one of zinc. Copper melts at 1080° C., 300° higher than the temperature at which zinc becomes volatile. The fact that dispute exists as to whether or not copper is toxic makes it certain that this metal does not possess any pronounced poisonous effects. Zinc is also recognised as non-poisonous in itself; but when volatilised it combines with oxygen to form an oxide, to the inhalation of which the attacks of brass-founders' ague have long been ascribed in the trade. The whole matter has recently been under investigation in the Harvard School of Medicine. Evidence has been acquired not only that zinc possesses no toxic properties, but even that it occurs normally and regularly in the various organs of the body; in suitable dilutions it can be used as a stimulant to vegetable life. Further researches are reported in papers which have appeared in the *Journal of Industrial Hygiene* for March and May. Two investigators submitted themselves to freshly generated fumes of zinc oxide, which they inhaled while in a cabinet containing known amounts. The one inhaled during five minutes some 48 mg. of zinc, of which about 24 mg. were retained; the other in 12 minutes inhaled about 74 mg. of zinc of which about 34 mg. were retained. Both subjects experienced an attack of chills some 10 hours later. In the one case the temperature rose to 102·8° F. and in the other to 101·8° F., falling again to normal within 12 hours. Both subjects were under close observation in hospital during the febrile period, and a leucocytosis was observed simultaneous with the rise of temperature. This leucocytosis persisted for an appreciable length of time after the body temperature reached normal. Some diminution also occurred in the vital capacity. Brass-founders recognise that they become more or less inured to attacks of ague, but that they lose their protection after a period away from the foundry. Similar results followed inhalation of fine particles, 0·4 micron in size, of zinc oxide powder, known as Kadox, but the pyrexia was less pronounced. One investigator, while making determinations as to the amount of zinc oxide present in the air of a foundry, was exposed to the fumes and experienced, as usual, an attack of ague. He followed up his observations the next day, when his exposure to the fumes was even greater than on the first occasion, but escaped a second attack. The other investigator

submitted himself in a cabinet to zinc fumes and experienced the usual attack of fever. The next day he again subjected himself to the same exposure, but on this occasion he, too, also failed to develop an attack. The writers believe that the acquired resistance is related in some way to the acquired leucocytosis which accompanies the rise of temperature and persists for some 24 hours after this has fallen. The Harvard investigators denote the condition as "metal fume fever"; they find that exposure to other finely divided particles, such as copper oxide, and sprays of compounds of other heavy metals, such as silver, mercury, iron, and antimony, have been reported as producing the same effect. They tried the matter out by exposing themselves to fumes of magnesium oxide—a product of a light metal; fever accompanied by leucocytosis followed. Possibly the condition is one brought about by exposure to the inhalation of minute particles of any kind; such particles may exert a physical effect upon protoplasm, causing a disintegration which is followed by protein absorption and pyrexia, an effect counteracted by the leucocytosis. The whole subject is receiving further attention at Harvard.

## WOLF BOYS.

SINCE the publication of an annotation on this subject in our issue of May 7th (p. 984) we have received from Dr. W. H. Coupland, medical superintendent of the Royal Albert Institution for the Feebleminded, a copy of Chambers's *Edinburgh Journal* for July 17th, 1852, containing an unsigned article on an anonymous pamphlet entitled "An Account of Wolves Nurturing Children in their Dens: By an Indian Official," which was published by one Jenkin Thomas, printer, in Plymouth in that year. Reference was made in THE LANCET of March 24th, 1888, to this publication, and we note that in the correspondence in the *Times* that was evoked by the appearance of the wolf boy of Allahabad Sir R. Armstrong-Jones alludes to our contribution, although he misquotes the date as 1889. In considering this "brief, rough pamphlet, published in a provincial town" in 1852, the writer in the *Edinburgh Journal* is able to recognise "both in the manner and matter the pen of Colonel Sleeman, the British resident at the court of Lucknow, whose invaluable services in putting down thuggee and dacoitee in India we have already described." Recently the correctness of this literary perspicacity was confirmed by Lieut.-Colonel J. L. Sleeman, of Hampton House, Hereford, a grandsom of the famous resident, who in a letter to the *Times* of May 10th last states that the "unknown writer" of the Plymouth print was none other than his illustrious grandfather. Except for the article in the *Edinburgh Journal*, ever hospitable to the unusual and the bizarre, little attention seems to have been given to General Sleeman's pamphlet, and it was not until the latter had reappeared, almost word for word, in Vol. I. of his "Journey through the Kingdom of Oude," published in London in 1858, that England grew aware of these Indian wolf children. Serious students of philosophy then became intrigued in the subject, and grave professors of mythology and natural history endeavoured to obtain some common ground for its discussion. Dr. Ireland's examination and conclusion, published in July, 1874, remains, however, irrefutable. He studied the histories of the nine recorded cases. Six of these were described by General Sleeman, first in his pamphlet and later in his book; one was under the care of Dr. Whishaw, of Lucknow, as noted in our previous annotation; details of two others occur in some "Notes on Children found Living with Wolves in the North-West Province of Oude," by Mr. V. Ball, of the Geological Survey of India, as printed in the *Journal of the Asiatic Society* (proceedings for June, 1873). Of these cases it is said: "Dr. Whishaw's one is, of course, out of the question. He was neither fostered by wolves, nor was he an idiot, and one of Sleeman's cases is stated to have been simply rescued from wolves." All the remaining cases Dr. Ireland declared to be cases of idiots "found wandering," as idiots wander in London to this day—even in London with the most watchful and the best of social services in the world.

## MERCUROCHROME IN THE LABORATORY.

MERCUROCHROME, a soluble compound of mercury with dibrom-fluorescein, has been recommended recently as an antiseptic for intravenous injection in cases of septicæmia, ulcerative endocarditis, and other general infections. In the belief that it confers antiseptic properties on the bile, its use has been suggested in the treatment of typhoid carriers. The bactericidal action of this drug has now been investigated [1] by L. Colebrook and R. Hare, both in the test-tube and the living body. Whilst their experiments are neither numerous nor cover the whole area in which bactericidal action might be manifested, they nevertheless should suffice to indicate any striking value possessed by the preparation. In brief, their findings have been that mercurochrome, added to human defibrinated blood outside the body, in no way enhances the bactericidal power of the blood; that the intravenous injection of the drug does not increase the bactericidal action of the blood when tested shortly afterwards; and that no special antiseptic properties are conferred upon the bile by such an injection. These results are of some importance, and should engage the attention of those who counsel the use of mercurochrome. Whilst they are open not only to the objection of their scantiness, but also to the common criticism which may be levelled against this class of experiment in general—that it does not throw direct light upon the actual processes within the body—they certainly fail to indicate any antiseptic action of the drug within their obvious limits. The fact that good clinical results have been recorded in cases of severe septic infection is possibly to be explained as a result akin to those obtained with eusol, with the non-specific intravenous injection of vaccines, and with the intravenous injection of other substances of high molecular weight. These results are probably non-specific and due to the implication of some mechanism at present little understood.

## TREATMENT OF SNAKE-BITE.

PRACTICALLY every part of the United States is inhabited by poisonous snakes, and in certain regions large projects for agricultural development are held back through the immigrants' fear of this peril. New agricultural development means an increase in rodents and small animals which form the staple diet of the snake, and the hazards of farming in the tropics are very real. Snake-bite therefore constitutes a distinct problem in public health, and the Mulford Biological Laboratories, of Glenolden, Pa, include an Antivenin Institute for the purpose of furthering knowledge of all animals poisonous to man and of developing means to prevent death and alleviate symptoms due to their attack. This institute has just brought out its first *Bulletin*, which is to be a quarterly publication dealing with all the ramifications of snake-bite and kindred problems. The editors aim at making it an authoritative source of information and a medium of popular education. The issue opens with an article by Mr. Raymond L. Ditmars on the occurrence and habits of poisonous snakes. The author acquits Maine and New Hampshire of the charge of harbouring these pests, but cannot altogether clear Vermont, as rattlesnakes are occasionally reported from there. Rattlers extend well over the rest of the States, and the swampy southern districts are overrun by many other species. It appears that copperhead snakes still exist within the actual boundaries of New York City and in many other eastern towns they are living very close to Main Street. The writer describes more than a dozen kinds of rattler, as well as the copperhead, moccassin, and coral snakes. The majority of northern

[1] British Journal of Experimental Pathology, April, 1927.

snakes are well disposed and will not strike if unmolested; to their retiring habits alone does Mr. Ditmars ascribe the rarity of bites among the silk-stockinged low-shoed "hikers" from the towns. Snakes seem to dislike modern motor roads and are confined to the areas included by the highways. In the south matters are very different. Rattlers prowl over open areas of country and flash instantly into a fight instead of seeking a friendly crevice; an envenomed blow is driven before the intruder is aware of the enemy's presence. Leather gaiters from knee to shoe give 90 per cent. protection. Mr. L. M. Klauber gives more detailed descriptions of the south-western species of Crotalus, and maintains that in his district very few snakes will fight without considerable provocation. His article is illustrated by photographs which should materially help in identifying the different reptiles. Mr. M. L. Crimmins contributes a note on Texas rattlers and describes the symptoms of a bite, which are primarily hæmolytic and secondarily neurotoxic. Blood cells and other tissues are destroyed and gangrene is likely to follow a bite. The San Antonio station recommends prompt application of a tourniquet, loosened for five seconds every 20 minutes to prevent gangrene, a cross-incision one-third of an inch deep, and soaking with 1/3000 permanganate. The usual first-aid treatment is kerosene oil, and the 19 cases subsequently treated with serum were nearly all a day old and suffering from very grave symptoms. Yet all recovered. It seems therefore that anticrotalic serum is a valuable addition to the pharmacopœia of agricultural doctors in the States, and it is a pity that it is at present so rare that it can only be used to prevent death in grave cases and not to relieve suffering in milder ones. Other more technical papers in this interesting *Bulletin* include studies of neotropical and African snakes by Messrs. T. Barbour and A. do Amaral. We have in Great Britain no rattlesnake problem, but our native venomous reptile, the viper, is responsible now and then for a case of severe illness, more often still for much pain and alarm, and the rarity of its attack is no reason for ignoring the problem. Where distances are so small it ought to be possible for some central laboratory to keep a stock of antiviper serum ready for use. Its director at any rate will not have to emulate Major Scott, of the Fort Sam Houston Laboratories, who flew 2600 miles to administer anti-rattler serum in Texas.

## THE SIZE OF THE THYMUS.

EVIDENCE continues to accumulate that the discovery of a large thymus and ample lymphoid tissue elsewhere in the body does not satisfactorily explain an unexpected death in an apparently healthy child. Dr. Edith Boyd, in a communication to the Minnesota Pathological Society,[1] concluded from her studies that the "status thymico-lymphaticus" represents the normal thymus and lymphoid tissue of a well-nourished child. This is in effect the same as the provisional verdict[2] of the joint committee appointed by the Pathological Society and the Medical Research Council to look into the matter, and we await the further and final findings of that committee with interest. Ignorance of the normal body is a serious defect in all studies in morbid anatomy; in this particular instance it has naturally been rather difficult to believe that a few days fever or digestive disturbance or, indeed, illness of any kind, will cause such a marked wasting of the lymphoid tissue throughout the body that our conceptions derived from the average hospital case are quantitatively all wrong. But there seems little doubt that this is actually the case, and the pathologist will have to look further than the thymus for the explanation of some of the tragedies which he is called upon to elucidate. It seems that a large or abnormally persistent thymus is significant mostly in endocrine disorders which commonly fall on adolescents and young adults. In exophthalmic goitre a persistent thymus is almost the rule, especially in young subjects, which corresponds with the experimental observation that removal of the thyroid hastens the natural involution of the thymus. This is retarded by adrenalectomy, which may bring about actual regeneration, as is shown in a certain number of examples of Addison's disease. Apart from such relationships considerable caution is necessary in charging the thymus with any primary vice of being too big.

[1] Arch. Path. Lab. Med., 1927, iii., 739.
[2] Jour. Path. Bact., 1925, xxviii., 132.

## RISKS OF CHILDBIRTH IN VICTORIA.

THE incidence of maternal mortality and morbidity has in recent years engaged the attention of the medical profession in Australia, as in other English-speaking countries. Some time ago the University of Melbourne appointed Dr. R. Marshall Allan as director of obstetric research for two years, "to inquire into the causes of maternal mortality and morbidity in Victoria, and suggest means to prevent or lessen the same." Dr. Allan's interim report, which has now been issued, is based upon an inquiry which included (1) a statistical investigation; (2) an exhaustive study of domestic obstetric practice, involving personal interviews with medical practitioners and the inspection of all hospitals registered to admit obstetric cases; (3) clinical research. On a total of 35,922 births, the maternal mortality-rate in Victoria for the year 1925 was 4·3 per 1000 live births. The decrease in deaths from all puerperal causes since 1905 is 23 per cent., and in the death-rate from sepsis of 38 per cent., though sepsis is still responsible for slightly more than one-third of all puerperal deaths. Notification, to be of any use, must be carried out with knowledge and intelligence. In Victoria it is so little understood that more than once in the years 1921–25 the deaths from puerperal fever exceeded the total notifications. Dr. Allan sees great danger in this tendency to "shelter behind a fictitiously low mortality-rate," and says that "the first result of an awakened professional conscience will be an increase in the number of deaths registered, and a rise in the statistical rate due entirely to more accurate certification of the cause of death." He points out that statistics on a small scale may lead to erroneous conceptions, and that Victoria's task is not to compare her situation with standards of other countries, but rather to face the fact that she is losing 150 mothers a year from causes connected with childbirth, a loss which cannot be afforded, and to determine that dissatisfaction shall be the prelude to such coöperation between the public and the medical profession as will lead to prevention.

Obstetric nurses in Victoria are not controlled by the General Nurses' Registration Board, but by a separate Midwives' Board composed of five public service members, "none of whom are in touch with current obstetric problems." The Board of Examiners, however, consists of three doctors and a nurse, all in active practice, and Dr. Allan speaks appreciatively of the way in which examinations are conducted, though he considers that the written and oral tests should be supplemented by a practical examination at the bedside. There are at present 2646 registered midwives, of whom half are trained, the other half being permitted to "practice" on the basis of previous experience. Difficulty is experienced in persuading the well-trained woman to take up obstetric practice, largely owing to the influence of untrained nurses who are prepared to combine domestic duties with their nursing care. About 60 per cent. of all confinements in Victoria take place in either public or private hospitals. Hitherto private hospitals have been allowed to register as training schools, but, on the advice of the Board of Examiners, the Midwives' Board has refused to register any more. Good obstetric work is carried out at the Women's Hospital, Melbourne, The Queen Victoria Hospital, and at the St. George's and Bethesda "intermediate" hospitals, the two latter having had one death among 400 patients and two deaths among 1317 patients respectively.

Dr. Allan deals sympathetically with the difficulties which face the conscientious obstetric practitioner in the suburbs of Melbourne, and which differ in degree but not in kind from those met with in this country. Patients and their relatives, often backed up by ignorant nurses, clamour for anæsthesia and quick delivery; hospital accommodation is poor and the nurses are untrained, while the desire to take the maximum number of cases is a temptation to hurry delivery. Dr. Allan had personal interviews with 230 practitioners, and he pays a high tribute to many "faithful disciples of the obstetric art" in the smaller townships, who manage to maintain a high standard of efficiency under discouraging circumstances. He recommends the establishment of large modern maternity units with accommodation at reasonable rates. Among some practitioners a tendency was noted to resort too easily to operation for contracted pelvis, and to make too frequent vaginal examinations. Out of 132 cases of Cæsarean section the majority were performed for contracted pelvis, placenta prævia, and toxæmia, and the mortality following this method of treating eclampsia and placenta prævia did not compare favourably with that following more conservative methods. There is still hard work to be done in educating the public, and providing conditions in which practitioners can do their best work, but Dr. Allan is convinced that the majority at least are on the right road.

## NATURAL HEALING IN PULMONARY TUBERCULOSIS.

ALL through the nineteenth century pathologists exercised their minds with the question: What are the true characteristics of the histological lesion of the tubercle, especially as it affects the lung? Even the discovery of the bacillus did not finally settle the question, though it narrowed it down to limits within which reasonable discussion could take place and emphasised the ætiological unity of all the lesions of pulmonary tuberculosis. The names of those who have entered upon this, now classical, discussion are legion. In a recent monograph, Dr. Marc Jaquerod [1] has essayed to carry the subject a stage further by defining the natural processes of healing which occur in pulmonary tuberculosis. He starts out from the standpoint of Letulle and Bezançon that the two essential lesions of the disease are (1) an "inflammatory nodule of the connective tissue constituted by a coalescence of a variable number of primitive giant-celled follicles," and (2) a "bacillary broncho-alveolitis"—which correspond respectively with the productive and exudative lesions of the German pathologists; but he considers that the three well-recognised morbid anatomical results of inflammation described by pathologists—viz., caseous degeneration, fibrous transformation, and calcification—are not all. There may be a fourth process, resolution, which escapes the eye of those who make post-mortem examinations. In proof of this the author quotes the example of a fresh laparotomy, performed years after a previous one, when the tubercles seen on the first occasion were found to have disappeared without a cicatrised vestige of the disease. "But mention these facts," he adds, "to a pathologist, who is not also a clinician, and he will deny them. Why? Because he has not seen them." Dr. Jaquerod believes that the reabsorption of bacilli and inflammatory products, probably by a humoral process rather than a phagocytic one, is possible. Bacteriolysis, indeed, may promote resolution whilst phagocytosis may produce metastases by transporting bacilli to a distant part of the body, a point strongly emphasised also by Calmette. In other words, given adequate rest and time for the humoral process to act, a lesion may clear up little by little and end by being completely cured. The monograph contains many beautiful radiograms illustrating clinical points in the argument, with chest diagrams of physical signs accompanying them—a wholly commendable method of demonstration—but the pathological evidence for the thesis of complete resolution of the lesions of pulmonary tuberculosis is entirely lacking. The pathologist is in fact warned off the field of discussion early in the book by the time-honoured test of agnosticism that those who cannot see will not believe. By analogy with other diseases of an infective nature, resolution in tuberculosis is obviously not impossible; but without adhering to the old adage "once tuberculous, always tuberculous" we believe pathological proof of resolution should be forthcoming if it is really a fact. The evidence of the radiogram cannot be taken as final.

[1] The Natural Processes of Healing in Pulmonary Tuberculosis. By Marc Jaquerod, M.D., Physician in Charge, Grand Hotel Sanatorium, Leysin. London Baillière, Tindall, and Cox. 1926. Pp. 108. 6s.

# The Services.

Surgeon Rear-Admiral Arthur Gaskell, C.B., O.B.E., takes up the post of Director-General of the Medical Department of the Navy, in succession to Surgeon Vice-Admiral Sir Joseph Chambers, K.C.B., C.M.G., on July 1st.

### ROYAL NAVAL MEDICAL SERVICE.

Surg. Rear Admiral J. F. Hall is placed on the Retd. List at his own request.

Surg. Lt. (D.). C. Williams to *Vivid*, for R.N. Barracks, Devonport, for duty at St. Budeaux.

### ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Sub-Lt. H. M. Willoughby to be Surg. Lt.

### WAR OFFICE.

Col. J. P. Helliwell, late the A.D. Corps, from Inspr. of Dental Servs., to be Asst. Dir.-Gen. (for the Dental Servs.).

### ROYAL ARMY MEDICAL CORPS.

Capt. W. Bruce to be Maj.
Capt. C. F. Anthonisz to be Maj. (Prov.).
E. M. Wright to be Temp. Lt.

### ROYAL AIR FORCE.

Flight Lt. C. G. J. Nicolls is granted a permanent commission in this rank.

Flying Officer P. D. Barling is promoted to the rank of Flight Lt.

### DEATHS IN THE SERVICES.

Surgeon-General Henry Cook, I.M.S. (retired), died at Lee-on-Solent in his ninety-sixth year on May 30th. He studied medicine at St. George's and St. Mary's Hospitals and qualified with the M.R.C.S. Eng. in 1854. After joining the Indian Medical Service, he served with the Persian Expedition of 1857, and with the Abyssinian Expedition of 1867–68, receiving medals on both occasions. He had been principal and professor of medicine and hygiene at Grant Medical College, Bombay, and Dean of the Faculty of Medicine at Bombay University. Surgeon-General Cook was a Fellow of the Royal College of Physicians of London, of the Royal Geographical Society, of the Royal Microscopical Society, and of the Geological Society, and a justice of the peace for Gloucestershire.

DOCTORS AND SICKNESS BENEFIT.—At the annual congress of the National Deposit Friendly Society on May 28th Mr. F. Acton, the President, drew attention to the fact that in panel practice a medical man who refuses to grant a sickness certificate is liable to lose his patient. Some measure ought to be devised by the Ministry of Health, he said, which would qualify or check the right of the patient to go to another doctor.

IMPORTATION OF DRUGS.—The Board of Trade intends to exempt uncompounded drugs from the requirement that imported goods bearing a British name or trade mark must also bear an indication of origin. This exemption will not extend to proprietary articles, or to articles sold in their original packing. Communications on the subject should be addressed before June 7th to the Secretary, Board of Trade, Great George-street, Westminster, S.W. 1.

# Modern Technique in Treatment.

*A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.*

## CCXXVI.

## CHRONIC GONORRHŒA IN WOMEN.

CHRONIC gonorrhœa in women is one of the most difficult diseases to cure completely, The patient may have had a discharge for some years which she has neglected, through ignorance of its significance, or she may have had an attack of acute gonorrhœa and abandoned treatment too early. In any case, the practitioner usually has the condition brought to his notice through some other illness, which when traced to its origin, reveals an old gonococcal infection as the primary source. The superimposed illness may be an arthritis of one or more joints, the joints most frequently affected being elbow, wrist, finger-joints, knee and ankle. When other possible foci of infection, oral or intestinal, have been excluded, a patient may be found to have a discharge which, she says, is of long-standing, and causes her no trouble. Again, the patient's symptoms may be purely pelvic, she may complain of menorrhagia, of pain in one or both iliac fossæ, or of sacral backache, but will stoutly deny that she has a discharge. The persistent practitioner will frequently find evidence of old-standing infection on pelvic examination, and such an examination should become recognised as an essential part of a general overhaul. Sometimes also after patient investigation a suggestive previous history is obtained—an attack of severe cystitis some time before, or a baby with ophthalmia neonatorum. There may be a history of pyrexia after an easy childbirth, followed by a considerable period of pelvic illness with menorrhagia, and even sometimes metrorrhagia; finally there remains a vaginal discharge, mostly slight, which causes little inconvenience. In many cases, on examination, old patches of staining will be seen round urethral or Bartholin orifices, and by massage of the anterior vaginal wall gleet or muco-pus can be expressed from the urethra. Vaginal examination will almost certainly reveal a chronic cervicitis, with an erosion and muco-purulent exudate, and often thickening of the Fallopian tubes. The discharge will contain mainly secondary organisms. Gonococci are rarely found in such cases unless from a urethral film. The gonococcus is, of course, intracellular at this stage, within polymorph or epithelial cells; therefore douching or painting alone cannot eradicate the disease. The complement-deviation test for gonorrhœa is of doubtful value in the chronic stage, while cultures mostly grow only staphylococci.

The practitioner may know well that the disease is a chronic gonorrhœa, but he should be chary of making his diagnosis known to the patient or her husband unless the previous attack of gonorrhœa is admitted or the gonococcus has been definitely isolated. The diagnosis may well be left at "chronic urethritis or cervicitis," but the importance of the lesion and of the discharge as a focus of infection must be stressed. Many puerperal septicæmias are undoubtedly due to a chronic gonorrhœa.

### *Local Measures.*

Treatment must consist primarily in keeping the patient clean and comfortable, by clearing away obvious discharge by careful douching, at the same time taking care to avoid over-douching. The douche material used depends on the type of discharge and on the practitioner's own preference.

Patients left to themselves frequently choose lysol douches and these, if not thoroughly mixed, or if used too strong, seem to make her more sore and less confortable than before. My preference in very purulent cases is for a douche of 1 per cent. lactic acid, or of sanitas, or of liq. sodæ chlorinatæ 1 in 80, or weak pot. permang. In less purulent cases a plain douche of hypertonic saline, or of boracic, or of zinc-alum powder in equal parts, ʒi of powder to each pint of douche water, is useful and comfortable. Bladder and urethral washouts must, of course, be done with bland, non-irritating drugs. I use 1 in 8000 permanganate solution or boracic ʒ i to pint, or 1 in 6000 biniodide of mercury, taking care that none of the biniodide solution remains in the bladder.

The accepted drug for application to the cervix in gonorrhœa has for long been one of the preparations of silver: but though these salts have a wide field of usefulness, I do not use them exclusively. Saturated solution of pot. permang., 20 per cent. mercurochrome, and 1 in 100 acriflavine are among other useful drugs. An important point to remember when painting the cervix is that any adherent mucopus must be dissolved with liq. potassæ, or better still, with a saturated solution of sodii bicarb. before the antiseptic paint is applied. In painting erosions of cervix, a solution of picric acid is sometimes useful, or 10 or 15 per cent. picric in alcohol may be employed. No useful purpose is served, however, by undue use of caustic substances in painting the cervix. Soluble pessaries of contramine, lactic acid, or of ordinary sulphur or of protargol are sometimes placed against the cervix, and kept in position by a dry tampon which is removed 12 hours later; or tampons soaked in one of the glycerine preparations may be preferred—e.g., glyc. boracis, glyc. ac. tannic., or glyc. with 5 per cent. ichthyol and 2 per cent. lactic acid. This last is a most useful tampon, though in some patients if it is continued for more than a few days an irritant vaginitis results. Small lesions such as Nabothian cysts on the cervix must be punctured; Skene's ducts and ducts of glands of Bartholin, if infected, must be washed out with an antiseptic solution twice or three times a week.

This treatment is only satisfactory when carried out by a well-trained gynæcological nurse, or by the doctor himself. Self-douching by the patient is useless; a good nurse will accomplish in three weeks what it will take the patient three months to achieve.

In addition to local applications measures directed towards raising the patient's resistance are required if the disease is to be eradicated.

### *Vaccines.*

Vaccines have had periods of disrepute. To get a really good result from their administration, it is necessary to have a vaccine freshly made from organisms of a vigorous strain. The vaccine may either be autogenous or stock. If a stock vaccine is used it must come fresh from a reliable source, otherwise both practitioner and patient will be disappointed with the result.

The best vaccine for a chronic gonorrhœa contains gonococci and secondary organisms combined, the usual mixed vaccine consisting of gonococci, staphylococci, streptococci, and diphtheroid bacilli. The first dose for a woman in average health should be from 25–40 millions, depending on her body weight. After a week, if the patient has not had a reaction, the dose may be doubled. A reaction is indicated by rise of temperature and pulse-rate from 6–24 hours after the injection, by headache, sickness, or backache, or by a general feeling of malaise. Should there have been a slight reaction only, an addition of 50 per cent. to the previous dose may be given a week later. When a really marked reaction occurs the dose should be repeated at the next injection, instead of being increased. The injections are best given at intervals of a week to begin with, and later at intervals of 10–14 days. Too frequent doses seem to induce a negative phase and to retard recovery.

After eight to ten doses of vaccine, even if the patient has improved, there should be a rest of a couple of months; then another series of vaccines or another method of accessory treatment may be begun.

### *Non-specific Protein Therapy.*

"Non-specific protein therapy" has many advocates at the present time, and has proved of great use. It is simple and inexpensive; a drawback is the considerable reaction—local or general—so that the patient has to be prepared to lie up, or at least "go slow," for 24 hours after an injection.

For housewife or business woman alike, an injection on a Saturday afternoon is convenient, the patient arranging to be in bed not later than four or five hours afterwards. The reaction usually begins with rise of temperature and pulse-rate, the maximum rise—which may be 102° F.—occurring 8–12 hours after injection. During this period, naturally, the patient feels far from well, and usually aches all over. Some patients experience no general reaction, but complain of very severe pain and stiffness at the site of injection. The injections should be intramuscular, the gluteal muscles

being generally chosen in women. It is best for the patient to have no other drug, but should the reaction be too severe, 10 gr. of aspirin will make her comfortable.

Before starting protein injections it is wise to make sure that the patient is not subject to asthma or hay-fever. Such patients tend, a few seconds or minutes after injection, to have a marked vasomotor reaction, with severe flushing of face and neck, suffusion of conjunctivæ, very rapid pulse and a feeling of suffocation, or as if the head would burst. Administration of hypodermic injection of 10 minims of adrenalin (1 in 1000), P.D. & Co., usually clears this at once, but if it does not do so completely, the dose can be repeated in 10 minutes. Such reactions are rare.

There is usually an exacerbation of the discharge for 24 hours after the injection, followed by improvement. A marked leucocytosis while the reaction is at its height gradually subsides till, in a few days, the white count is practically normal. These injections may be repeated weekly; four are usually enough. The materials most frequently used are milk, a collosal silver preparation, or T.A.B. or some similar vaccine. Milk is prepared by standing it in a boiling water-jacket for 10–15 minutes. A clean, boiled test-tube can be three-parts filled with milk, stopped with flamed cotton-wool in the usual way, and stood in a steriliser or small enamelled basin of water, which is then brought to the boil and boiled for at least 10 minutes. The doses of milk usually given are 4, 5, 8, and 10 c.cm. in successive weeks.

Sometimes *B. coli* vaccine is given at the same time as the milk injection; or a dose of electrargol (collosal silver) may be given intravenously, followed immediately by a small hypodermic dose of mixed gonococcal vaccine. Sometimes T.A.B. is given weekly in doses of ½ to 1 c.cm. till three or four doses have been given. The underlying idea of all these injections is the same.

*The Glycerine Drain.*

In a chronic gonococcal endometritis with discharge and menorrhagia, great relief is often obtained by using the glycerine drain.

This simple method was introduced by Dr. Remington Hobbs, and as usually practised consists in gentle dilatation the cervix to No. 7 or 8 Hegar. About 2 c.cm. of pure glycerine is then injected into the cavity of the uterus from a sterile 5 c.cm. syringe; a small rubber drainage-tube is inserted through the internal os and is left to drain into the vagina, which is lightly packed with iodoform gauze; the gauze is removed in 24 hours, the rubber drain 24 hours later. In a multipara an anæsthetic may not be required; only a very short anæsthetic is required in any patient, and the patient is in no way upset by the manipulation.

This method has usually to be repeated, in a chronic case two or three times, at intervals of three weeks or so. Some gynæcologists prefer to pack the uterine cavity with 50 per cent. glycerine and iodine, or with 5 per cent. mercurochrome in glycerine.

*Diathermy.*

Where there is a chronic urethritis of some duration, in my opinion there is no treatment so effective as diathermy, as suggested and practised by E. P. Cumberbatch and J. W. Arthur Robinson.

By means of a diathermy machine with special electrodes a temperature of 112° F. in the patient's urethra can be reached and maintained for 10 to 15 minutes without causing pain, and most obstinate cases of urethritis have been completely cleared up. Similarly, in cases of chronic cervicitis, a heat of 112·5° to 113° F. can be safely borne by the cervix for 10 to 15 minutes; a cervical electrode, shaped like a uterine sound, but containing a thermometer is used. This penetrating heat is highly inhibitory to the gonococcus, and the patient has no discomfort; but rash applications of 115° to 120° F. invariably produce pain, from pelvic congestion, which may persist for a couple of weeks. This treatment gives admirable results in cases of gonococcal arthritis, the joints clearing up sometimes as if by magic. Before administering diathermy treatment the practitioner must have careful tuition, since inexpert handling will inevitably produce pain or even severe burns.

One last word; if a married woman has a chronic gonorrhœa, time, patience, and money are thrown away on treating her if her husband has old, untreated prostatitis or vesiculitis.

MARGARET RORKE, M.B., Ch.B. Glasg.,
Medical Officer in Charge of the Female V.D. Department, Royal Free Hospital.

# GENERAL MEDICAL COUNCIL.

## SUMMER SESSION, 1927.

### TUESDAY, MAY 24TH.

### PENAL CASES.

IN accordance with the usual custom the penal cases were heard in public, the Council deliberated on them in camera, and the results were then announced.

The Registrar read the report of the Dental Board in regard to Joseph Halliday Magee, registered on Dec. 7th, 1922, as of 53, St. Mary's-terrace, Tyne Dock, "Dentist 1921"; charged with canvassing for patients on board certain ships. On hearing the statement of Mr. Magee, the Council decided to remit his case to the Dental Board for further inquiry.

Another report from the Dental Board charged Samuel Theodore Hilton, registered on Nov. 29th, 1922, as of 16, East-crescent, Manton, Worksop, "Dentist 1921," with canvassing. Mr. Hilton did not appear. The Council ordered that his name be erased from the Dentists' Register.

*The Case of Samuel Grahame Connor*, registered as of 119, Oxford-street, London, W. 1, M.B., C.M. 1889, U. Edin. Dr. Connor had been charged before the Council at its Summer Session, 1926, with having been convicted at Marlborough-street police-court on three summonses for an offence against the Dangerous Drugs Act, and the Council had postponed judgment for one year, directing him to produce evidence of his good professional behaviour during the interval.[1] On considering several testimonials and hearing the assurance of Dr. Connor that he would take care never to lay himself open to such charges again, the Council did not see fit to erase his name from the Register.

*The Case of Austin Heron*, registered as of the West African Medical Staff, L., L.M. 1924, R.C.P. Irel., L., L.M. 1924, R.C.S. Irel. Dr. Heron had been charged before the Council on May 29th, 1925, with having been convicted for obscenely exposing his person to certain females, and judgment had been postponed for a year. In 1926, Dr. Heron being absent on service, judgment had been postponed for a further year. On considering his testimonials and his personal assurance of his intention to maintain good professional behaviour, the Council decided not to erase his name from the Register.

*The Case of Jogesh Chandra Bose*, registered as of 276, Cherrywood-road, Birmingham, M.R.C.S., L.R.C.P., 1923. The charge against this practitioner was as follows:—

That, being a registered medical practitioner, you, on Feb. 1st, 1927, signed and issued the following certificate, viz.:—

This is to certify that William Hopkins, residing at 5/149, Fazeley-street, is suffering from bronchitis and is not able to attend school.

1.2.27. J. C. BOSE, M.R.C.S.;

whereas the said William Hopkins had not been under your medical care, nor had you seen or examined him on Feb. 1st, 1927, or at all; which certificate was untrue, misleading, or improper; and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants, the City of Birmingham Education Committee, were represented by Mr. Digby Seymour, solicitor. The respondent was represented by Mr. Oswald Hempson, solicitor.

Mr. John Stevenson, chief superintendent of the Birmingham School Attendance Officers, speaking to his statutory declaration, stated that respondent had admitted in his presence having written the certificate in answer to a request from the mother, Florence Hopkins, transmitted through her small daughter on Feb. 1st. Respondent had written a letter on Feb. 27th to Dr. Innes, the chief medical officer of schools, in

[1] THE LANCET, 1926, i., 1147.

which he had admitted not having examined the boy and expressed regret. On Feb. 7th the Education Committee had received a letter from Mrs. Hopkins explaining that she had not asked Dr. Bose to examine the boy because she had not had the money, but had thought it would be unnecessary because the doctor had been visiting every week, and knew her complaint (the message had been "Mother has 'flu and thinks Willy has got it too").

Mr. Thomas Alan Jinks, divisional superintendent of the Birmingham School Attendance Officers, corroborated. The documents were put before the Council.

Mrs. Florence May Hopkins, mother of the boy William, stated to her statutory declaration that the boy had not been attended by any doctor. He had been absent from school for a week from Jan. 30th. On Feb. 1st she had sent her daughter Vera to tell Dr. Bose that she (witness) had influenza, and that she wanted a second note for William. Dr. Bose had sent her a prescription, and a certificate stating that William was suffering from bronchitis. She had sent the certificate to his school, and paid Dr. Bose 6*d*. for it. She had really wanted her son to stay at home and look after the children. On Feb. 5th, witness stated, Dr. Bose had visited her and said that there had been trouble about the certificate, and had offered her 5*s*. to say nothing about it. She had refused to take this, but he had put it on the dresser. On the 12th Dr. Bose had come again, saying that he was going up to see the school medical officer, and asking her if she had heard any more about the matter. On the 19th he had brought her a £1 note and asked her again if she had heard any more; he had given her another 5*s*. on leaving. He had promised her £50 to say nothing. On the 25th she had written to him asking for a loan of £2, and on the 26th he had come to the door and handed her two 10*s*. notes. Cross-examined, however, she admitted that she had received two letters from Mr. Bose's solicitors, denying any liability and threatening action if she asked him for any more money, and made any further derogatory statements about him. She admitted having written to Mr. Bose charging him with indecent intent in asking her on one occasion to speak to him upstairs, although relatives had been present on that occasion. She admitted having said nothing about these matters in her statutory declaration.

Richard George Hopkins, nephew of Florence Hopkins, corroborated her evidence regarding the gifts of money. Under cross-examination he fainted, and no further questions were asked.

William Hopkins also gave evidence corroborating his mother's.

Mr. Bose, giving evidence in his own defence, admitted having written the certificate without examining the boy William, but stated the he had seen him three days before, and that he had then had a cold and a cough. He expressed his regret, and an undertaking that he would be more careful in future. He denied ever having given Mrs. Hopkins any money to keep silent, but stated that she had attempted to blackmail him by threatening to inform the medical officer of schools. She had written him two letters, which he had referred to his solicitors, who had replied suitably. Her charges against him of bribery and of making an indecent suggestion had been brought to protect herself from the accusation of blackmail.

Mr. Bose's adviser put in several letters testifying to the respondent's excellent character and conduct.

The President, announcing the decision of the Council, said that it had been proved to their satisfaction that the certificate in question had been given in a lax and careless manner, and was in fact untrue, misleading, or improper. The Council regarded laxity in the giving of certificates as a grave matter, likely to result in injurious consequences to patients and others, and worthy of severe censure. In order, however, to give respondent time to reconsider his position in this regard, they had decided to postpone judgment until the November session of this year. Respondent would be required before that date to supply the names of two or three professional brethren who would be prepared to testify to his character and conduct in the interval.

### WEDNESDAY, MAY 25TH.

*The Case of Frederick Joseph William Porter*, D.S.O., registered as of the Army Medical Service, L.S.A. Lond., 1889, M.R.C.S. Eng., L.R.C.P. Lond., 1890. The charge against this respondent was that he had sought to obtain patients, and promote his own professional advantage, by means of notices inserted in the Indian press. The notices read:—

1. In the *Times of India* of Feb. 5th, 1926: "Major F. J. W. Porter, R.A.M.C., D.S.O., has now returned to India from England after an absence of a year, and will shortly resume his practice at Karachi." 2. In the *Kaisar-i-Hind*, Bombay, of Feb. 7th, 1926: "Major F. J. W. Porter, R.A.M.C., D.S.O., has now returned to India after a year's absence in England and will shortly take up the practice in Karachi"—(*translation*). 3. In the *Daily Gazette* of Feb. 8th, 1926: "Major F. J. W. Porter, D.S.O., R.A.M.C., has now returned to India from England after an absence of a year, and is putting up at the Carlton Hotel, where he may be consulted." 4. In the *Sind Observer*, Karachi, of Feb. 8th, 1926: "Major F. J. W. Porter, D.S.O., R.A.M.C., who was formerly in Bombay, has now returned to India after an absence of a year and is putting up at the Carlton Hotel in this city, where he may be consulted." 5. In the *Parsi Sansar*, Karachi, of Feb. 10th, 1926: "Well-known surgeon in Karachi. Major Porter, the well-known surgeon of Bombay, has returned to India after a year's absence in England, and is staying at the Carlton Hotel, where he may be consulted"—(*translation*). 6. In the *Sindvasi*, of Hyderabad, Sind, of Feb. 17th, 1926: "Major Porter in Karachi. The people of the *Times of India*, Bombay, write that Major Porter, D.S.O. and R.A.M.C., retired, has come back to India after an absence of one year, and stays in the Carlton Hotel, Karachi, where he can be consulted"—(*translation*).

The complainants, who did not appear, were Lieut.-Colonel Ivor Davenport Jones, I.M.S., M.B., Major Charles Newton-Davis, *M.C.*, I.M.S., M.R.C.S., and Dr. Guy Theodore Wrench.

The respondent was accompanied by Mr. Oswald Hempson, solicitor. In answer to the charges, he stated that until April, 1923, he had practised in Bombay, and that he had then retired to England, but had been compelled to return to Bombay and start practice afresh. In 1924 he had again tried to retire, but had had to go back a second time in 1926. In 1923, when he had arrived in Bombay, he had consulted the Registrar of the Bombay Medical Council, giving him the form of the proposed announcement, and had been told that he might insert it at least twice. The form stated that he had arrived and was staying at a certain address. When he returned in 1926 he had been advised to go and practise in Karachi. Since he knew one of the directors of the *Times of India*, he had asked him to put in announcement (1), and his friend had done so. He had not seen the necessity for consulting the Registrar again, as this was practically the same announcement that he had had inserted in 1923. It had appeared in the social and personal columns, items in which were never paid for. At his request, the *Times of India* had sent the announcement to the Parsee journal, *Kaisar-i-Hind*. He had gone personally to the editors of the other papers and given them copies of announcement (1). He had inserted the phrase, "where he may now be consulted," in order to avoid being mistaken for a "globe-trotter." He had not instructed them to vary the notice, and had not seen the translations until they had appeared, when he had been disgusted. He had obtained a statement from the editor of the Parsee journal that the announcement had not been given him in the words that were printed. The complainant, Dr. Wrench, had, because of these announcements, refused to make his acquaintance, and had made defamatory statements about him to other people. In April, 1926, respondent had commenced an action against Dr. Wrench in the local police-court, since the Bombay registrar had informed him that his conduct was covered by

Rule 23. This was a criminal action, but civil process took an impracticably long time. The magistrate had dismissed his summons. Cross-examined, he admitted that he had known that the Indian Penal Code provided a penalty of two years' imprisonment for defamation of character; also that he had failed in a similar action several years before.

The Council found the facts alleged against the respondent to have been proved, but postponed judgment, subject to the usual provisions, until the May session of 1928.

*The Case of John Morrison Lever*, registered as of 6, Savile-road, Chapeltown, Leeds, L.M.S.S.A. Lond., 1917, M.B., Ch.B., 1917, Univ. Leeds. This practitioner was charged with knowingly enabling, by his countenance or assistance, women not certified under the Midwives Act, 1902, to attend certain women in childbirth, under cover or pretence that the patients were attended, or to be attended by the uncertified women under his direction, and that in each case he signed a maternity benefit certificate, thereby enabling the uncertified women, in contravention of the said Act, to practise as if they were certified thereunder. The complainants, the London County Council, were represented by Mr. Pawlyn, assistant solicitor to the L.C.C. Dr. Lever was accompanied by Mr. Charles Davis, of Messrs. Bulcraig and Davis, solicitors.

Mr. Pawlyn stated that, with one exception, the women concerned had refused either to make a sworn declaration or to attend before the Council to give evidence. Mr. Davis objected to the sworn declaration of Albert Garner, an inspector of the Public Health Department of the L.C.C., on the ground that it contained hearsay evidence, and the Council, advised by its legal assessor, decided to admit only such parts of this declaration as the witness could testify to from his own knowledge.

Mr. Garner, in evidence, stated that during the early part of 1926 he had been engaged in making inquiries into the practices of the unregistered women mentioned in the charge. He had been present at the proceedings against one of them, Mrs. Ketley, before a magistrate, when she had been bound over for a year. He had seen all the women concerned in the present charge, but had failed to induce any of them, except one of the mothers, to make a declaration. He identified the maternity benefit certificates signed by respondent in favour of the mothers in the case. He had not asked Dr. Lever to appear at the proceedings against Ketley, nor told him that they were being instituted.

Mr. Pawlyn put into court the declaration of Mrs. Rose Baldwin, in which the deponent had stated that she had engaged Mrs. Ketley to attend her in her confinement for 15*s*. She had informed Dr. Lever of this. The birth had taken place at 2.30 A.M., and respondent had examined her on the following day, but had not been present at the actual birth. He had attended her for some time afterwards, and had signed the maternity benefit.

Dr. Lever's adviser submitted that there was no case for the respondent to answer, and placed him in the witness-box to explain the circumstances.

Dr. Lever stated that Mrs. Baldwin's husband had called on him one morning saying that his wife had been confined during the night, and that the local doctor she had engaged had refused to attend her. Respondent had attended her for the remainder of the time that she had been in bed. He had visited her as soon as he could, after her husband had called him in. He had made no arrangement of any sort or kind with Mrs. Ketley. He produced his day-book in evidence of the fact that he had been engaged by all the other women before their confinements, and had actually visited them before and after the births. Cross-examined, he denied any coöperation of any kind with the uncertified women in his district. The mothers used to engage them months ahead, and the fees of the certified women, none of whom lived very near, were beyond their means.

On a motion of Mr. H. L. Eason, seconded by Sir Robert Bolam, the Council resolved to deliberate on the case without hearing any further evidence. As a result of their deliberation they decided that the charge had not been proved, and dismissed the case.

FRIDAY, MAY 27TH.

*The Cases of Lawrence Crombie*, registered as of Dunollie, Dalmuir, Glasgow, M.B., Ch.B., 1913, Glasg.; of *Eliazer Gelfer*, registered as of 45, Abbotsford-place, Glasgow, C.5, L.R.C.P., L.R.C.S., L.R.F.P.S., 1923; and of *William Mason Hamilton*, registered as of Law Junction, Lanarkshire, M.B., Ch.B., 1921, Glas.

These practitioners had been summoned to appear before the Council on the charge of employing, under cover of their own qualifications, assistants who were left in charge of premises where scheduled poisons were sold to the public, but who were not legally qualified to sell scheduled poisons.

The complainants were the Pharmaceutical Society of Great Britain. Mr. O. Hempson accompanied Drs. Crombie and Hamilton. Dr. Gelfer was not present, but sent his defence in writing.

Dr. Gelfer, in his letter, stated that the poison which his assistant had sold was a 4-oz. bottle of lysol, sealed and labelled as poison with instructions for use. He had never heard that any qualification was needed for its sale. He had stopped the sale of lysol three months ago, when the inspector, who had been the first to ask for a bottle, pointed out his misdemeanour. The lysol had been for his own and his wife's use. He did not employ his assistant to sell scheduled poisons, and all except the lysol were kept locked up.

Dr. Crombie stated in evidence that his assistant had sold some Jeyes' fluid without his knowledge. She had been told she must not sell poisons. He had a qualified chemist to run his dispensary. He had now removed his poisonous disinfectants. Cross-examined, he said that the Jeyes' fluid had got loose into the cupboard from his surgery by accident. He did not know how it had been sold without label or name. He had not heard that the police had had great difficulty in tracing it in poison cases. In answer to a question by the President, he admitted having heard of the regulations since this complaint had been brought against him. Although this particular Jeyes' fluid had been there for his own use, he had some for sale as well.

Mr. T. Armstrong, M.P.S., Dr. Crombie's dispenser, stated that the assistant knew what she could sell and what she could not. He had removed all dangerous poisons from her care as soon as he had taken over the dispensary. Cross-examined, he stated that he did not understand that Jeyes' fluid was a dangerous poison. He had given the assistant no special directions about Jeyes' fluid or lysol. The inspector had asked for lysol, and the assistant, not having any, had recommended Jeyes' fluid, which she had sold in an unlabelled bottle. It was left to her to do the labelling.

In reply to a question by the President, witness stated that he was responsible for the conduct of the dispensary; he went there several times a week, but it was kept open without him. The assistant, who was employed by the respondent, was in charge when neither of them were there.

Dr. Hamilton stated in his defence that his assistant's only duties were to open and close the surgery, and to sell a few tooth-brushes and tubes of paste. The whole stock was only worth 2½ guineas. She had a list of things she was allowed to sell, and had been warned not to touch poisons of any sort. What lysol he had was for his own use, and not for sale, and was therefore unlabelled. He did his own dispensing. The assistant would get half the profits from her sales.

Mr. Hempson pointed out, for the defence, that although ignorance of the law was no excuse, there was a ready sale of Jeyes' fluid and lysol, which many people did not know were scheduled poisons. He produced a bottle of Jeyes' fluid which he had bought that day. On the President pointing out that there

were two grades of this fluid, he could not answer for which his specimen might be.

The Council found the facts alleged against the respondents proved to their satisfaction. The practice of allowing unqualified assistants to sell these disinfectants, said the President, was fraught with danger to the public and not creditable to the medical profession. He quoted from the Council's Warning Notice. Having regard, however, to the regrets expressed by the respondents and their pledges to amend their precautions against this abuse, the Council would postpone judgment for six months, subject to the usual provisos.

*The Case of Duncan Miller*, registered as of Glebe House, Washington, Co. Durham, M.B., Ch.B., 1911, Aberd. The charge was that of having been convicted of being drunk whilst in charge of a motor-car, and on another occasion of having been found drunk on the highway. Respondent stated that since he had had malaria he had been very susceptible to alcohol. Since the last conviction, in December, 1926, he had been a complete abstainer. The Council decided to suspend judgment until May, 1928, but warned him that any conviction in the interval might cause his name to be erased at once.

# Public Health Services.

## DIAGNOSIS OF SMALL-POX IN LONDON: "MISSED" CASES.

THE London County Council has issued a reminder to all practitioners within its area that in recent years outbreaks of small-pox have occurred through the agency of "missed" cases. In view of the importance, therefore, of securing the early recognition and diagnosis of small-pox, the Council draws attention to the desirability of conferring at once with the medical officer of health *of the borough concerned* in all doubtful cases and also of ensuring that no case is removed to hospital without first consulting the medical officer. If difficulty should arise in securing immediate touch with the M.O.H. the services of Dr. W. McConnel Wanklyn will be available at any time of the day or night and during week-ends, on application to the Public Health Department, County Hall, Westminster Bridge, S.E. 1. (Telephone: Hop 5000.)

## SPECIAL SCHOOLS.

THE Board of Education's list[1] of special schools and institutions for defective children is interesting as showing what progress has been made. The amount of this progress varies greatly in different parts of the country. In some areas the authorities have no establishments of their own and make use to some extent of those belonging to their neighbours—an arrangement that has many disadvantages. The grouping under counties, moreover, does not give an accurate picture of the true state of affairs; for example, some of the special schools in Kent belong to outside authorities such as the London County Council, whilst others are maintained by borough and urban district councils and not by the county authority. Similarly, the Soss Moss School for Epileptics is given under Cheshire, though a footnote explains that it is maintained by the Manchester Education Authority.

Speaking generally there is nearly enough accommodation for the totally blind and deaf, but great benefit would result from earlier admission, for all experts agree that deaf children ought to begin their training much earlier if they are to acquire good speech. There is a great lack of accommodation for the mentally defective children; less than a half of them are dealt with, and a large proportion of the places provided for them are concentrated in a few places like London, Manchester, Liverpool, and Birmingham, whilst whole counties like Cumberland and Cornwall have no special schools for these children within their borders. Even where there are some day special schools the problem cannot be considered as completely solved. The most troublesome feature of many of these children is instability, and where this character is strongly marked residential school-care is necessary. Apart from residential schools, those offering the best promise for the future are the ones which give manual work and elementary industrial training to the elder mentally defective pupils. It is sometimes suggested that it is an economic advantage to let these children go into industry at the age of 14 because employers will then be more ready to accept them. But the very reason which makes employers accept children at this age causes them to get rid of the same children when they are 16, and they are then thrown upon the world unemployed and untrained. The additional two years of manual and moral training makes a difference to their future both as regards the capacity for permanent employment and the control of antisocial tendencies.

Much more provision, too, is needed for the physically defective, and in these cases it is more obvious, though probably no more true, that expenditure on salvage is the best economy. Orthopædic schools and residential open-air schools in particular repay their cost, often changing a weakly child from a burden to the community into a valuable worker and citizen. Accommodation is most of all seen to be lacking for epileptics. Assuming that 0·6 per 1000 of the child population are affected, the number to be dealt with would be about 3000, but the figures given in the list (p. 31) shows that the total provision is for 525 cases only. Lastly, there is scarcely any mention of provision for those difficult cases of double defect. Apparently the only establishments dealing with this problem are the school at Penn (Buckinghamshire), maintained by the L.C.C. for the mentally defective and deaf, and the little Ellen Terry Home at Reigate for the blind and mentally defective, at which there are at present only five pupils.

[1] Certified Special Schools, Recognised Institutions for the Training of the Blind and other Defective Children, and Nursery Schools in England and Wales. List 42. 1927. H.M. Stationery Office. 1s.

## INSTITUTE OF HOSPITAL ALMONERS.

A MEETING was held in support of this Institute on May 26th at the Grotrian Hall, Wigmore-street, Lady (ROSE) BRADFORD, the President of the Institute, being in the chair.

DR. CHARLES GRAY, chairman of the Council, briefly surveyed the history of the movement, which was largely due to the inspired enthusiasm of the late Sir Charles Loch. The first almoner was appointed at the Royal Free Hospital in 1895, and the Hospital Almoners Council was formed ten years later. Originally it had been supposed that any woman with sympathy and brains could do the work, but it soon became obvious that special training in the science of charitable assistance must be undertaken if the community on the one hand, and the patients on the other, were to get the utmost advantage from the efforts of the almoner. The course of study organised by the Institute was originally of three months' duration, but had been extended from time to time, and now it covered 2 to 3 years. Theoretical instruction at a school of economics combined with visits to charity organisation associations was followed by a term of practical work under the supervision of a trained almoner in a hospital. The scope of the work done by the almoners had extended in recent years from out- to in-patients, and thence to the special departments and the maternity districts, and a further enlargement of the sphere of their activities to include Poor-law infirmaries, mental hospitals, tuberculosis dispensaries, and institutions for the feeble-minded was to be anticipated.

Sir JOHN ROSE BRADFORD spoke on the relation of almoners' work to medicine. The advance of medicine in recent years was due not only to improved methods of technique and nursing, but also to the development of a system of after-care. It was in this direction that almoners did so much useful ancillary work. Treatment used to be confined to periods of illness, if not even actually to the acute stage of illness, but it was now recognised that many diseases were less formidable in the acute stage than they were later on, and intelligent observation was needed long after the hospital stage if the utmost benefit from treatment was to be secured. The need for after-care had long been recognised for discharged mental cases and was now considered essential for many diseases affecting the body, such as acute rheumatism. Sufferers from chronic diseases could often be maintained in fair health if supervised. A trained almoner could afford great help in the investigation of disease, whereas an untrained one could not effectively coöperate in medical research.

Sir BERKELEY MOYNIHAN, in corroborating Sir John Rose Bradford, said that he was glad to fulfil this function of a surgeon, who was often called in to demonstrate the accuracy of teaching and prediction made by a physician. He added that something more than medical and surgical efforts were needed in hospital work, which was concerned not only with momentary restoration of health to individuals, but with the retention of efficiency in a unit of the industrial army. In surgery the ultimate outcome was more important than the immediate result, and after-care was urgently needed. The doctor might order rest, change, or apparatus which the patient could not possibly secure unaided; his instructions often seemed unintelligible and his suggestions impracticable until they had been interpreted by the almoner. As to preventive work, patients sometimes presented themselves at hospital in such a debilitated condition that the almoner had to devise means to restore their vitality before treatment could be given. The public ignorance of fundamental facts was still so great that it was hardly an exaggeration to say that a multitude of people either committed suicide or were murdered. In order to fulfil her function as an ambassador of medicine on the domestic hearth an almoner must be a specially trained gentlewoman moved not by sterile pity but by active compassion. She had to be the ambassador not only of the doctor, but of the community. It was her business to be cognisant of all the agencies which might play a part in promoting the welfare of a patient and to see that he was in a position to take advantage of them. There was at present much talk of the possible future administration of Poor-law hospitals by city councils. The Government might with advantage give a lead in insisting on the appointment of almoners to such institutions and induce the public and the governing bodies of hospitals to realise that without trained almoners on the staff their work was not fully effective.

Sir ARTHUR STANLEY spoke from the standpoint of a hospital treasurer. It used to be thought that the chief value of an almoner was to prevent abuse of the hospital. This was certainly one of her functions, but gross attempts by the well-to-do to get hospital attention were nowadays rare. After the war the financial condition of St. Thomas's Hospital was at a low ebb. The almoners explained the situation to the patients, with the result that the income derived from their contributions rose from £1400 to £14,000. Sir Arthur Stanley quoted a letter from Dr. John Fairbairn referring to the value to medical students of the collaboration of the almoner.

Sir STCLAIR THOMSON proposed a vote of thanks to the speakers and the President, and Lady Bradford replied.

Sir Alfred Rice-Oxley has been awarded the decoration of the Legion d'Honneur as an acknowledgment of the services which he rendered France as a member of the British League of Help.

# Correspondence.

"Audi alteram partem."

## THE PURITY OF ANÆSTHETIC ETHER.

*To the Editor of* THE LANCET.

SIR,—Dr. S. R. Wilson's paper on "ether" convulsions in last week's issue is of importance not only because it demonstrates convincingly the cause of these convulsions, but because it draws attention to a much-neglected subject—namely, the purity of ether. Probably the reason of this neglect is in the first place the lack of tuition in the clinical period, and in the second place an optimistic reliance by anæsthetists and hospital pharmacists on the distinctly florid descriptions attached by some manufacturers to their products. Even Dr. Wilson seems to have been hypnotised. There is the less reason for this attitude, for Mr. H. Finnemore in 1914, at that time senior pharmacist to Guy's Hospital, read a paper on Anæsthetic Ether of Commerce before the British Pharmaceutical Conference,[1] and another on the same subject before the Section of Anæsthetics of the Royal Society of Medicine in 1915,[2] whilst Mr. G. Middleton also discussed the subject fully in 1924 at the British Pharmaceutical Conference.[3]

The method recommended by Finnemore for selecting a methylated ether has given complete satisfaction at Guy's. The ether is chosen after a series of tests from samples supplied by the leading manufacturers; a contract is then placed for the year and the ether is delivered monthly and tested on delivery. The tests used for peroxides are the alkaline potassium permanganate solution (suggested by Finnemore), the vanadic acid, and the cadmium potassium iodide tests, and for aldehydes the reaction with solid potassium hydroxide, which is allowed to remain in contact with the ether for at least six hours, although the B.P. only requires a time-limit of one hour. The result of this constant care is that the manufacturers are kept up to the mark, and on only two, or at the outside three occasions, has the ether been returned for further purification. But it is not intended to remain content; methylated ether can be made to reach a higher standard. It is a question of the selection of the most stringent tests for peroxides which are also of easy application. But here one must be careful, for as ether is an unstable body and has to be sent on long voyages, too high a standard must not be demanded of the B.P.

As regards decomposition of ether in my apparatus may I refer Dr. Wilson to an article in your columns [4] describing this apparatus, in which I drew attention to the importance of testing the ether, before and after use, for peroxides and aldehydes, and stating that my practice was to use the ether twice, as the result of many tests had shown that a pure ether did not develop aldehydes and only occasionally peroxides after the first case. But this article did not contemplate the recent modification which substitutes for the hand-bellows—an instrument which demands a small output of energy—the easy, effortless, continuous stream of oxygen. I believe this method to have inherent dangers for, owing to hyperoxygenation, the signs of an overdose are easily masked. Further, the tendency to decomposition is increased, although, of course, no decomposition of a pure ether takes place in a reasonable time. For example, I have on a recent afternoon used the same ether, vaporised by oxygen and exposed to a strong light, for three consecutive major operations; a few ounces of fresh ether were added to the bottle before the last case, an amputation of the breast. The ether was then tested and found to be free from peroxides and aldehydes. Dr. Wilson bubbled oxygen through ether for two hours in an

[1] Pharm. Jour., July 25th, 1914.
[2] Proc. Roy. Soc. Med. Anæsth., March, 1915, p. 1.
[3] Pharm. Jour., July 26th, 1924.
[4] THE LANCET, 1916, i., 70.

artificial light and found that decomposition had been rapid and great; this ether, however, was impure to start with, and it is known that decomposition once started goes on rapidly under favourable conditions. Of these conditions the most important is the presence of light, and I think Dr. Wilson's suggestion of amber-tinted bottles for my apparatus is good, especially for hospitals. The British Drug Houses, Ltd., kindly conducted for me in 1924 the experiment of bubbling oxygen through their highly purified ether for a considerable time—viz., four hours—but the apparatus was protected from light. The vapour was condensed and collected in two fractions. Each of the fractions and the residue were found to be free from peroxides and aldehydes.

Dr. Wilson's precautionary measures include the discarding of "stale" ether, but he does not define "stale." I should like to suggest that the odour is a useful guide. An ether, a few c.cm. of which when allowed to evaporate from the hand give a disagreeable or pungent odour, should be discarded. Some ethers are not free from this odour on delivery; they should be rejected. Four specimens of used ether, three of which had been allowed to stand in my apparatus for 24 hours, were tested recently for impurities; two, which gave on evaporation this characteristic odour, also gave positive reactions for aldehydes and peroxides; two, which were free from odour, were also free from impurities.

I am, Sir, yours faithfully,

May 28th, 1927. FRANCIS E. SHIPWAY.

## THE EMPLOYMENT OF MARRIED WOMEN.

*The Editor of* THE LANCET.

SIR,—In your leading article of May 14th you refer to the action of the Durham County Council in dismissing the married women officers on its medical staff. The following is a copy of the resolution passed by the Council to which your article refers:—

"That the County Council give three months' notice terminating the appointment of all married women officers on its medical staff whose husbands are in receipt of an adequate income, and that in future no married women be given appointments on the medical staff of the department whose husbands are in receipt of an adequate income."

As a result of the passing of this resolution I have been dismissed from my appointment as assistant maternity and child welfare officer to the Durham County Council. I have since applied for a similar post under the Finsbury Borough Council and my application was returned immediately as "ineligible." I know there are several other boroughs which object to married medical women on their staff, and the Ministry of Health itself leads the way in refusing to employ married women. I feel it will be difficult, if not impossible, to obtain other employment in the Public Health Service. Apparently this service is not open as a career for medical women unless they are prepared to remain unmarried.

The whole question of the employment of married women bristles with difficulties, mostly imaginary. The objection of the Durham County Council to the husband being in possession of an adequate income seems a typical example of such a "difficulty." There seems to be a strong public opinion amongst the laity against the employment of married women. The point of view of the medical profession is, of course, different. It is obviously against the honour and interest of that profession that it should be entered by a number of women who intend to give up their work on marriage and merely regard medicine as an interlude until such an event occurs.

This is a matter to be taken up primarily by medical women themselves. It is clearly unjust that they should be allowed to take medical degrees and the D.P.H. and later be shut out from a large sphere of practice such as the Public Health Service.

I am, Sir, yours faithfully,

ELEANOR C. E. MCINTOSH, M.B., B.S., D.P.H.

Bishop Auckland, May 29th, 1927.

## THE REGISTERED NURSES' BUREAU.

*To the Editor of* THE LANCET.

SIR,—As chairman of the honorary advisory committee of the Registered Nurses' Bureau, I have to-day received a letter from Messrs. A. Wander, Ltd., in which they state that they are making a contribution of £4000 towards its expenses. "We are prepared," they say, "to guarantee the Bureau financially over a period of two years, by which time we are confident that the recognition, approval, and support of your own profession will have placed its help beyond question."

In connexion with this handsome donation, which will, I am sure, be deeply appreciated by the medical and nursing professions, may I make two observations? (1) Too few of my colleagues realise that the majority of the devoted women who nurse their patients are paying heavy weekly commissions on their all too meagre remuneration, and that, to private concerns which thus exploit them. The Bureau eliminates that. I cannot too strongly urge all my professional confrères to acquaint themselves with the work of the R.N.B. and to coöperate in this endeavour to help in a real and practical way the nurses on whom they depend so much. (2) The R.N.B. is occupied only with the work of the private State-registered nurse—and in London only for the moment. It steers clear of, and touches upon no controversial subject, and has no political or factional bias or affiliation. The recognition, approval, and support of the medical profession will ensure the success of its work, and I appeal, therefore, to all medical men to accord that support wholeheartedly.

The registrar will gladly send full information to any medical man or to any member of the public. The address of the Bureau is 55, Chancery-lane, W.C. 2. Telephone: Holborn 6846.

I am, Sir, yours faithfully,

W. ARBUTHNOT LANE.

Cavendish-square, W., May 30th, 1927.

## IODINE.

*To the Editor of* THE LANCET.

SIR,—My attention has been drawn to the review in your issue of May 21st (p. 1114) of my paper on the Use of Iodine in Various Deficiency Diseases. The publication has been widely quoted in the lay press from Australia to the United States, and has brought me many hundreds of letters from medical men and women and others. The only instances of damning with faint praise have been your review and that in one other medical paper. Perhaps it is natural that this should be so, and I only write because I do not accept two phrases in your criticism as fair comment.

The first is "research workers may look somewhat askance at his 'some hundreds of cases' *without recorded controls*" (the italics are mine). My report deals mainly with common ailments of childhood—debility, backwardness, chronic bronchitis, nocturnal incontinence, worms, boils, and the like—and not with fancy diseases. Such conditions are prevalent everywhere, and are certainly common in Cumberland. For years before the use of iodine was started all recognised forms of treatment were employed in our school clinics for these conditions. Since we began to use iodine so many of each class have been treated on the old lines, so many on iodine in one form or other. The results have been compared; the record cards of both groups are available for reference at any time. If this procedure does not provide "recorded controls" then I do not understand the meaning of "control." If, further, as is the case, my colleagues here—men of up to 12 years' experience of school medical work—have, as a result of their comparisons of the results of the two lines of treatment, unanimously discarded the old method in favour of iodine treatment in many conditions—e.g., worms, incontinence, backwardness, chronic bronchitis, &c., that, I think, is good evidence.

The second phrase I query is "his rather undiscriminating choice of references to the value of iodine in disorder of all kinds." Strongly believing, as I do, in the value of iodine therapy I endeavoured, in this report, to collect so far as I could all possible references to the use of iodine for all sorts of conditions, and to give the fullest information as to lines of treatment, and as to *alleged* beneficial results; not that I believe them all, but to lay a foundation on which others desiring to further investigate the matter might build, and nothing more.

The report is a reprint, and was written in the first place for a lay committee, and the criticism of the first report by medical men which reached me was that I did not sufficiently outline the "how, the why, and the wherefore" of the matter. In other words, I was asked to set out clearly the *possible* indications for the use of iodine and the exact methods. Hence the matter contained in the reprint. Being anxious to avoid the risk of the somewhat obvious and superficial jibe that one was propounding a "cure-all" remedy, I was particularly careful in the wording of the report. That this was recognised in some quarters may be demonstrated by a quotation from the editorial comment in the *Municipal Journal*: "Dr. Fraser is expert in the moderate statement of his case." You apparently do not share this view.

The value of the claims is open to test. I say quite definitely, for example, that boils will readily yield to collosal iodine in appropriate doses, that threadworms are quickly cured by iodised butterscotch, that the nocturnal incontinence of children will in all cases be much reduced and in nearly all cases cured by either of the above. These claims are straightforward and easily tested. If they prove reliable many of the other claims are no more difficult of trial, and I have no remotest doubt that a fair test will lead to a revision of the verdict "Not proven" which no doubt arises, not from any weakness in the case for iodine, but from my imperfect statement of it. I am, Sir, yours faithfully,

Carlisle, May 24th, 1927. KENNETH FRASER.

## MEDICAL LITERATURE FOR KENYA COLONY.

*To the Editor of* THE LANCET.

SIR,—May I ask your help in making known a need of one of our latest outposts of Empire?

The Hon. Lady Grigg, wife of the Governor of Kenya, finding a serious deficiency of nursing aid for both white settlers and natives in the colony, has established a nursing institute which is already doing excellent work but requires further support. Among other appliances for which there is pressing need are medical books, and a supply of these would be gratefully welcomed not only by the nurses but by the doctors working amongst this rapidly growing population. Lady Grigg has asked the Victoria League, which has already sent out works of general literature, whether it could supplement these by a gift of books dealing with nursing, medicine, and surgery. If any of your readers should have works on these subjects which they no longer require, and which are in good condition and fairly up to date, they would be rendering valuable help if they would send them addressed to me, Dowager Countess of Jersey, President, Victoria League, 81, Cromwell-road, S.W. 7. I would thankfully acknowledge any such gifts. I am, Sir, yours faithfully,

M. E. JERSEY.

Victoria League House, 81, Cromwell-road, S.W. 7.
May 30th, 1927.

## CHILL DURING ULTRA-VIOLET TREATMENT.

*To the Editor of* THE LANCET.

SIR,—I should like to draw the attention of ultra-violet radiologists to a manner in which I think their ministrations to sufferers from neuritis and kindred ailments are handicapped. With considerable experience of the treatment as administered in London, the provinces, and on the continent, I have learnt that insufficient attention is paid to the temperature of the room in which the treatment is given. In order to get the best results and to avoid aggravating the symptoms, or even adding other ailments to that from which the patient is suffering, it is essential that the temperature of the room should be maintained at such a level as will enable the patient to lie, in absolute comfort, in a state of nudity, without any feeling of chilliness, and that all possible sources of draught should be excluded. This is also true even when only a portion of the body is exposed.

I have several cases in my mind where I am persuaded pain has been increased, not alleviated, by the treatment simply and solely because during its exhibition they were positively shivering with cold. And in two cases attacks of bronchitis intervened in elderly patients after séances from the same cause. I am confident that ultra-violet treatment should always be administered in well-ventilated rooms provided with means for keeping them at a regular and decidedly warm temperature, and be free from all sources of draught. Inattention to these details seems to be prevalent.

I am, Sir, yours faithfully,

LEONARD MOLLOY.

Harley-street, W., May 24th, 1927.

## THE *BACTERIUM PNEUMOSINTES*.

*To the Editor of* THE LANCET.

SIR,—We have read with great interest the account of the recent work of Dr. G. S. Wilson in attempting to isolate *B. pneumosintes* from cases of influenza during the recent epidemic (THE LANCET, May 28th, p. 1123).

We have ourselves been carrying out a similar investigation for the Medical Research Council, the results of which it is hoped to publish shortly. In the meantime we wish to record the fact that we also have been unable to isolate *B. pneumosintes* in any of the 12 cases we have investigated.

We are, Sir, yours faithfully,

RONALD G. CANTI,
LAWRENCE P. GARROD,
T. MEYRICK THOMAS.

Pathological Department, St. Bartholomew's Hospital, London, E.C., May 30th, 1927.

## INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 21ST, 1927.

*Notifications.*—The following cases of infectious disease were notified during the week:—Small-pox, 313 (last week 271); scarlet fever, 1513; diphtheria, 839; enteric fever, 57; pneumonia, 939; puerperal fever, 41; puerperal pyrexia, 94; cerebro-spinal fever, 11; acute poliomyelitis, 6; acute polio-encephalitis, 1; encephalitis lethargica, 38; dysentery, 5; ophthalmia neonatorum, 120.

Cases of small-pox were notified from the Counties of London 1 (Hackney), Derby 5, Durham 152, Lancaster 7, Middlesex 1 (Southall Norwood), Northumberland 29, Nottingham 5, Yorks, West Riding 59, Monmouth 54.

*Deaths.*—In the aggregate of great towns including London there were no deaths from small-pox, 1 (1) from enteric fever, 57 (2) from measles, 12 (0) from scarlet fever, 31 (13) from whooping-cough, 18 (6) from diphtheria, 43 (3) from diarrhœa and enteritis under two years, and 46 (7) from influenza. The figures in parentheses are those for London itself.

PRESENTATION TO A MEDICAL MAN.—The Board of the Manchester Victoria Jewish Hospital on May 29th gave a lunch and made a presentation to Dr. Nathan Charles Haring, who has been honorary physician to the hospital since its opening in 1904, and the chairman of its medical board. A further memorial to Dr. Haring's work is the foundation of a bed in the hospital to be named after him.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### VACCINATION BILL.

THE text of the Bill introduced in the House of Commons by Mr. GROVES to amend the law relating to compulsory vaccination has now been issued. It provides that no person shall be subjected to any penalty or loss or disability of any kind for refusing to be vaccinated, or for refusing to cause any child or young person to be vaccinated. No payment in respect of vaccination is to be made out of moneys voted by Parliament, or out of any local or general rate. Sections 29 and 31 of the Vaccination Act, 1867, and Section 1 (3) of the Vaccination Act, 1898, are repealed by the Bill. The Act is intended to come into operation on January 1st, 1928.

## HOUSE OF LORDS.

### TUESDAY, MAY 24TH.

### LIQUOR (POPULAR CONTROL) BILL.

The BISHOP OF LIVERPOOL, in moving the second reading of the Liquor (Popular Control) Bill, said the measure was first introduced three years ago by the late Bishop of Oxford, Dr. Burge. During the debate in 1924 the view was expressed that the Bill could best be improved not in Committee but by making a fresh draft and presenting it again. That had been done, but the main principles remained as before. The first was that there was a need and an opportunity for further legislation in this matter. There was in this country a vast amount of drinking, doing a vast amount of harm, but not amounting to what the police called drunkenness and not ending in the police courts. The progress that had been made during the last 20 years in this matter he willingly and thankfully acknowledged. There was a decrease in drunkenness which could be proved, he thought, by figures; there was also something which could not be proved by figures, but must be a matter of opinion. His impression was that there was an increase in sobriety, which was a very different thing. The people of the country were realising two things. The first was that an increase in sobriety—he did not mean decrease in actual drunkenness—meant an increase in efficiency, in national wealth and in public welfare; and the second was that there were powerful and quite artificial obstacles in the way of this progress. People were asking why these obstacles could not be removed and why they could not be made free to drink as much or as little as they liked. There were two ways of meeting that appeal. In the first place they might impose upon the whole country a single solution to be applicable equally in every part. That meant waiting until temperance reformers and other people were agreed as to what the solution should be, and that was not a very near prospect. The second method of meeting it was by conferring upon the inhabitants of local areas the right and responsibility of deciding how and to what extent liquor should be manufactured and distributed in their area. That was the method of the Bill, which made possible a series of experiments from the experience of which the country might ultimately be able to proceed to a single uniform solution for all areas. The areas were at present the City of London and the electoral divisions, or in the provinces the county boroughs, municipal boroughs with a population of 50,000 and more, the existing licensing districts, and new housing districts which contained more than 1500 houses. The franchise was the Parliamentary franchise, and the arrangement was that there should be a first preference and an alternative vote if the first preference was not carried. That was to prevent the decision being made by a real minority of the voters.

#### *A "Local Option" Bill.*

The Bill was a true Local Option Bill. Three choices were given. The first was "no change," and a bare majority would preserve the status quo. The next choice was what was called "reorganisation." There might be a certain number of areas in which people would say something like this: "We want reasonable opportunities for drinking, but we do not want to minister to the private interest of any individual or any company by having the consumption of drink in this area as high as possible. We do not want to be continually reminded by expensive advertisements how thirsty we are, and we do want to be rid of the liquor influence in local politics." If that view prevailed a bare majority would turn the area into a reorganisation area, and that meant that the whole of the manufacture and distribution of alcoholic liquor in that area would be managed by a central board of management, assisted by central and local advisory committees. They would get rid of redundant public-houses, abolish grocers' licenses, do away with advertisements of liquor, convert some public-houses according to local demands into places where food could be bought as well as drink, and secure that it was to nobody's interest that a large amount of drink should be consumed. That meant disinterested management and followed the lines now prevailing in the Carlisle area. The third option was called "no licence." There were a certain number of people in this country who believed that the only solution of their difficulties in regard to the liquor traffic was to abolish it altogether now. Where that view prevailed not by a bare majority, but by a majority consisting of 55 per cent. of the first preference votes, there would be no more licences at all. Drink must not be sold or manufactured in that area, and if it was consumed there it must be by those who got it outside. That was something very like prohibition, and here he quite recognised that they came up against one of the great difficulties of this Bill. If they excluded that option they would certainly secure an amount of support in the country very much greater than that which the Bill had already secured. But on the other hand, if they excluded that option they would also lose the support of many temperance societies and incur the active hostility of a few who would at once join the trade in opposing them. They said that if they were going in for local option they had no right to rule out an opinion which was firmly held, whether rightly or wrongly, by a very considerable number of people just because other people happened to dislike it. If they excluded the "no licence" option the Bill was wrecked, but he begged their lordships to remember that in speaking like this he was not arguing for prohibition, and also that the arguments against prohibition were not arguments against this Bill.

#### *Freedom in Revising Decisions.*

The Bill provided that areas should have a certain freedom in revising their decisions from time to time. It was laid down in the Bill that the first polls should be taken three years after the Bill had been enacted, and the other polls four years later. That was a doubtful point, and he did not think that they would lose very much if that requirement were dropped, and it was enacted that a fresh poll should be taken on the requisition of a certain number of voters. However, the essential principle was that the polls were recurrent. It was possible under this Bill for an area which had already decided to have periods of reorganisation to go forward, or as some might say backward, to prohibition. On the other hand, an area which had had experience of a "no licence" period might come on reflection to desire that that should be modified. If so, either could make the change, but neither of such areas having decided for reorganisation could go back to private ownership. The last principle of the Bill was that during 15 years after its passing there should be compensation paid to all interested persons. In the present Bill they had devised an easier and simpler scheme of valuation than that included in the 1924 Bill. The new scheme of valuation was based on Section 20 of the Licensing Consolidation Act of 1910, and took market values as the standard both for valuation of licences and also for the valuation of bricks and mortar. The Bill set up a Central Compensation Fund which was to be at the disposal of the Central Board of Management. Into that fund came, year by year, the trade levies. The licensees would continue to pay as now, but the owners of tied houses (90 per cent. of the whole) would pay an equivalent amount each year. The compensation paid to owners of redundant houses under the Balfour Act of 1904 would cease. This would result in a working capital which would come into the Compensation Fund at the rate of about £2,000,000 a year. Unless the hopes of the prohibitionists in this matter were wildly exceeded, he thought that there was no chance of more areas going dry than could be comfortably managed by the finance of the Bill. The Home Secretary had powers to postpone the second or third poll for a year if he found that the funds were not likely to be able to sustain the charges that might possibly be thrown upon them. Further the Board of Management would be able under this Bill to borrow, with leave of the Home Secretary, upon security of their Compensation Fund, backed, if necessary, by the receipts of customs and excise. He was not one of those who regarded the drink trade as a wicked trade, or who regarded brewers and wine merchants and publicans as having bad consciences, or no consciences at all. The real wrong was that the trade should be left in a position which seemed to impose upon it an obligation so unwholesome and dangerous. Forty years ago Lord Rosebery said: "If the State does not control the liquor traffic the liquor traffic will control the State." He (the Bishop of Liverpool) saw the danger coming nearer and nearer. Owing to the enormous influence wielded directly and indirectly by those who were concerned to uphold the liquor traffic they were approaching a state of things perilously near the corruption of our political system. Sooner or later the country would have to tackle this question, and he did not think it could be solved unless they took the trade clean out of private hands altogether.

*Rejection of the Bill Moved.*

Lord BANBURY, in moving the rejection of the Bill, said that one of its main features was a proposal to impose a charge or tax on certain members of the community. He did not believe that their lordships had any power to impose a tax on any section of His Majesty's subjects. He had always understood that the only body that could do that was the House of Commons, and even in the House of Commons a tax could not be imposed unless it was proposed by the Government. If the Bill reached the House of Commons unless it was taken up by the Government he did not believe that it would pass. There was an absolutely identical Bill in the House of Commons introduced by a Socialist Member. The names on the back of the Bill were one Socialist, one Liberal, and Viscountess Astor. He (Lord Banbury) thought there could be no doubt that this was the Bill of Viscount Astor, and he would ask him why he did not bring it in himself. Why did he hide behind a bishop? He did not call the provisions of this Bill popular control. He would like to use rather strong language about it if it had not been introduced by the right reverend prelate. If it had been introduced by Lord Astor he would say that it was a gerrymandering Bill. It was a bad Bill, and it was very doubtful whether it would stop drinking. If it did so the Board would be bankrupt, and he thought, therefore, that they had far better leave people to drink as much or as little as they liked. He had with him the statistics for 1925 of drunkenness in America, which was a prohibition country, and these showed that the drunkenness in America was far greater than in England. He thought that practically every country which had been foolish enough to enact a law of this kind had either reversed it or was going to reverse it.

*Two Aspects of the Drink Question.*

Viscount ASTOR said that if he were the real father and author of the Bill he would not be attempting to hide behind anybody else. He would support almost any measure for progress, or almost any temperance proposal except a Bill to impose prohibition on the nation. He wanted to make that quite clear. He supported the Bill before the House because he thought it provided a constructive proposal for dealing with two aspects of the drink question. There was what he called the alcohol question—that was to say the social evils which came from the unwise consumption of alcohol; and there was the question of the influence on the national life exercised by the drink trade. These were entirely different questions, and the Bill made a real constructive proposal for dealing with both. The commercial interest of the trade, organised as now on a competitive basis, was to stimulate the very maximum of consumption of intoxicants. Those who were interested in the temperance question welcomed the fact that the nation was much more sober than before the war. The Southborough Committee indicated the other day that we were more sober now because Parliament had reduced the number of hours during which drink might be sold, and had increased the price which the public had to pay. That was to say that various Acts of Parliament which had been passed had increased the sobriety of the nation, but they had all been opposed by the whole strength of the drink trade. At the present moment the trade was doing all it could to abolish some of the Acts which had made the country more sober. If they did so they would diminish the national sobriety. Although the alcohol question was much better than it was it was still a problem, and drink was still a factor in the causation of our social ills. The trade had been kind enough to say that he ought to be kicked out of the Conservative party because he supported the heads of the churches on temperance reform. He hoped they would change their attitude, because with the new electorate the Conservative Party would find that they were standing on a shakier platform than in the past if they relied wholeheartedly on the support, coöperation, and direction of the licensed trade, since the people were realising that it was impossible to reconcile national interests with those of the licensed trade. The influence of the drink trade in public life had been condemned not only by Lord Rosebery but by other prime ministers. He asked their lordships on which side they were going to be, on the side of the trade or on the side of the State? He would not discuss the merits or demerits of alcohol. A committee of experts under the Privy Council had done this very fully, and he thought he could summarise what those experts said by indicating that in their opinion alcohol, broadly speaking, was the alternative to effective performance. Lord Dawson of Penn had indicated some of the value of alcohol as he saw it. As he (Lord Astor) remembered, Lord Dawson said that where one had dull speakers at a public banquet and one wanted to keep people amused and interested, alcohol made them think that they were witty although they naturally did not possess wit; that where there were people who were not drinking alcohol they were dull, whereas at an adjoining table where people were drinking alcohol they found wit and sparkle. He thought that Lord Dawson also indicated that in the stress of modern life, with all its rush and bustle, if people insisted on what was called burning the candle at both ends alcohol might be a help. How desirable it might be for people to go on burning the candle at both ends he (Lord Astor) did not know. The more he studied the drink question, he said frankly the less he was ready to be dogmatised in what was the right solution for any locality. If the policy of "no licence" was wrong it could not win, but if it was right they could not stop it. In his public life he had two great principles which had helped him through. One was an abiding faith in the commonsense and patriotism of the British public, and the other was an increasing realisation that right must always overcome wrong. If their lordships had the same feeling they could support this Bill with confidence and without fear.

*Drunkenness Out of Fashion.*

Lord DESBOROUGH, speaking on behalf of the Government, said that he believed in elevating the whole tone of the people, and that had been done in a remarkable way for many years. Drunkenness in this country had gone out of fashion among all classes, and if they put down the great improvement in that respect merely to certain Acts of Parliament, or to certain systems of licence which had been introduced since the war, he thought that they were overlooking the great and gratifying fact that it was really the feelings of the people which had introduced this very great improvement in the habits of the people. He believed it was a wrong system to try to make people good by the votes of those with whom they did not agree. Such a system had always failed. The right way was by reason and argument to educate public opinion. The Southborough Committee said in their report:—

"We are of opinion, therefore, that while the schemes of State management at Carlisle, Gretna, and Cromarty Firth have already produced results which are of value, much still remains to be done for the purpose of ascertaining what system or type of public-house provides for the legitimate needs of the people without encouraging or fostering excessive drinking. We are not satisfied that the case has been established for the extension of the schemes to any other particular area or place."

As far as he could see, those remarks would equally apply to a system of public management. The Southborough Committee also added in reference to these schemes and he thought this was of importance:—

"We are of opinion that they should be continued, and that the work on which they are engaged should proceed until such time as it is possible to make a more final estimate of the results which have been achieved."

That rather summed up the attitude of His Majesty's Government on this portion of the Bill—namely, a provision for a vote on public or State management. The Government could not at the present time, without a great deal of further inquiry, support any scheme of absolutely stopping licences with a time limit as suggested in this Bill. The Government were and had been considering this very important and difficult question, but they were not at present in a position, and would not be until much further investigation was made, to draw up a Bill dealing with the matter, though they hoped to review the whole subject at the earliest possible moment.

*The Removal of Temptation.*

The Duke of MONTROSE said he was just as fond of a glass of wine as any noble lord who hoped to kill this Bill, but he did recognise that there was in this country an evil of intemperance, and that there was an agitation to do something to remove that evil. It was wise, practical, and possible to favour a measure such as the one under discussion which, while it preserved freedom of opinion for the community, allowed them to do away with the undesirable temptation to push the sale of liquor for unlimited and unrestricted gain.

Viscount SUMNER said that he gave every credit to the assumption that with trial and error it might be possible to run the system of public management with a moderate amount of public satisfaction. But before that could be such a success as to be any substitute for the present system many years must elapse; and he thought that those who were quite as earnest in the cause of temperance as the societies and speakers of whom they heard a great deal, would agree with him in saying that the wisest course they could pursue was to attack this evil indirectly. It was to the spread of education, to the rise in wages, to the training which was to be got in the judicious use of leisure, that they must look for an extensive improvement in temperance.

The Bishop of BRADFORD said it was a remarkable fact that every single denomination who belonged to the Temperance Council of the Christian Churches of England and Wales had given its approval to this particular Bill after careful consideration.

On the motion of the Earl of PLYMOUTH the debate was adjourned until Tuesday, June 21st.

# HOUSE OF COMMONS.

## WEDNESDAY, MAY 25TH.

### *Ventilation in Theatres and Public Halls.*

Sir ROBERT THOMAS asked the Minister of Health whether he was aware that there was neglect on the part of local authorities to ensure the provision of adequate means of ventilation in theatres, cinemas, and other places of public assembly; and whether he would appoint a committee to inquire into this matter.—Captain HACKING (Under Secretary for Home Affairs) replied: A circular was sent in 1920 to the licensing authorities urging them to use their powers under the Theatres Acts, 1843, to ensure the satisfactory condition of theatres, including ventilation. The Home Office have not received any complaints in recent years. If the hon. Member will send me any information he has in his possession, I will consider it.

### *Sale of Pasteurised Milk.*

Mr. BUXTON asked the Minister of Health the number of firms or persons licensed to sell pasteurised milk and the estimated proportion of pasteurised milk to other liquid milk sold in England and Wales.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: The number of pasteurising establishments in England and Wales licensed on March 31st last was 120, and the number of other places licensed for the sale of pasteurised milk at the same date was 573. My right hon. friend has no definite figures as to the quantity of pasteurised milk as defined by the Milk (Special Designations) Order, sold in England and Wales, but it might be very provisionally put at between 5 and 10 per cent. of the total amount of liquid milk.

### *Death-rate among Miners.*

Mr. SUTTON asked the Minister of Health the general death-rate from all causes, and also the death-rate of miners from all causes for the country as a whole; and whether he could give such figures separately for the various mining areas.—Sir KINGSLEY WOOD replied: I may refer the hon. Member to the table (Table C) on page 326 of vol. 3 of the Report of the Royal Commission on the Coal Industry, 1925, containing the following statistics furnished by the Registrar-General of the deaths in standard populations at ages of coal miners in various mining localities:—

| Locality. | 1921–23. Deaths—Coal miners in standard population aged 25–65. |
|---|---|
| Durham and Northumberland .. .. | 665 |
| Lancashire and Cheshire .. .. | 760 |
| Yorkshire, West Riding .. .. | 666 |
| Derby and Nottingham .. .. | 560 |
| South Wales, including Monmouth | 747 |

The corresponding figures for all England and Wales in 1921–3 are: all coal miners (aged 25–65), 673; all males (aged 25–65), 661.

### *Statutory Vaccination Declarations.*

Mr. DAY asked the Minister of Health if his attention had been called to the recent case of King *v.* Southwark Guardians ex parte Peabody Donation Fund, and if he was prepared to take steps to protect the interests of parents making the statutory declarations of belief that vaccination would be prejudicial to the health of their children by amending the Vaccination Orders of 1898 and 1907, so as to ensure that such statutory declarations should not be open to public inspection.—Mr. CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative. As regards the second part, as the register required to be kept under the Vaccination Act of 1867 would still be open to inspection, it does not appear that the course suggested would serve any useful purpose.

## THURSDAY, MAY 26TH.

### *Government Housing Subsidy to the L.C.C.*

Mr. DAY asked the Minister of Health what would be the approximate Government subsidy granted to the London County Council for housing schemes in the current year; and the number of houses it was proposed to erect under this subsidy scheme.—Sir KINGSLEY WOOD replied: The London County Council will receive the appropriate Exchequer contribution under the Housing Act, 1923, and the Housing (Financial Provisions) Act, 1924, for each house erected by them and by private enterprise with their assistance, and it is anticipated that about 9000 such houses will be completed during the financial year. In addition, it is expected that during the year about 900 tenement dwellings for rehousing in connexion with improvement schemes under the Housing Act, 1923, will be erected by the Council in respect of which the Exchequer contribution will be one-half of the estimated average annual loss incurred. It is estimated that the total payments to be made to the Council in the financial year 1927–28 on account of all housing schemes undertaken since 1919 (including schemes of the metropolitan boroughs under the Housing Act, 1919) will amount approximately to £570,000.

### *Small-pox in Northumberland.*

Mr. RUSSELL asked the Minister of Health whether his attention had been called to an outbreak of small-pox in Northumberland; the number of cases notified up to date and the areas chiefly affected; whether or not the epidemic was on the increase; whether he was satisfied that the local authorities had powers sufficient to cope with the position and that those powers were being exercised; and whether the source of infection had been traced.—Sir KINGSLEY WOOD replied: Small-pox has been prevalent in Northumberland since 1924. The total number of notified cases, up to the end of last week, is approximately 2300. The areas chiefly affected have been Ashington, Bedlingtonshire, Newcastle-on-Tyne, Morpeth, Prudhoe, and Tynemouth. The number of cases in the county shows no signs of diminution at present. My right hon. friend is of opinion that the local authorities have all necessary powers if adequate use is made by the public of the facilities provided for free vaccination, and is advised that these powers are being exercised. He is unable to state the original source of infection.

### *Condemned Houses in England and Wales.*

Mr. DAY asked the Minister of Health if he had any statistics showing the number of houses condemned for human habitation in England and Wales to the last convenient date; and if he could state the average number of persons occupying those houses and the average number of rooms contained in each house.—Mr. CHAMBERLAIN replied: According to the annual reports of medical officers of health for the year 1925, the latest date for which information is available, 14,035 houses were reported in that year as unfit for human habitation in England and Wales. Statistics are not available giving the further information desired by the hon. Member.

## MONDAY, MAY 30TH.

### *Evil Odour from Water in St. James's Park.*

Sir WILLIAM DAVISON asked the Home Secretary, as representing the First Commissioner of Works, whether his attention had been called to the evil odour at present arising from the ornamental water in St. James's Park which in some cases had caused sore-throats to those sitting by the water, and whether immediate steps would be taken to secure a remedy seeing that there was a large children's playground close to the lake.—Captain HACKING replied: Attention has already been drawn to this matter, and measures are being taken which it is hoped will provide an effective remedy.

Sir W. DAVISON asked if Captain Hacking was aware that the same thing occurred in 1910 and 1911 and that then it was successfully dealt with. Had the Office of Works considered whether the same treatment might not be carried out now?

Captain HACKING said that the Office of Works, in order to effect economy, had not run fresh water continuously into St. James's Park lake. The pumping of water from the Serpentine, however, was creating a current, which would probably have the desired effect.

### *Supply of Government Lymph to Private Practitioners.*

Sir WILLIAM DAVISON asked the Minister of Health whether he was aware that a number of the public were unwilling to go to public vaccinators to be vaccinated and preferred to be vaccinated by their own family doctor, though they desired to be vaccinated with Government lymph; that the Ministry were refusing to supply private practitioners other than public vaccinators with the lymph supplied by the Government lymph establishment, in which the public had confidence; and whether, having regard to the desirability, in the public interest, of having as few unprotected persons as possible, he would make arrangements for the supply of Government lymph to all qualified practitioners on application?

Dr. VERNON DAVIES asked the Minister of Health if he was aware that many medical practitioners, recognising the excellence of the lymph supplied to public vaccinators by the Government lymph establishement, would welcome the opportunity of purchasing supplies of this lymph for the vaccination of their private patients, but were precluded from doing so, and, bearing in mind the prevalence of small-pox in the country, would he consider the advisability of removing this restriction so that medical practitioners who were not public vaccinators might have the opportunity of using this lymph which had such a high reputation for efficiency.—Sir KINGSLEY WOOD replied: The reputation of Government lymph has been achieved, not only by its quality and consistency, but by the close attention given to its results by means of official inspection and records. If Government lymph were to be made available to private practitioners generally it would appear very difficult, if not impossible, to ensure similar checks and controls. Moreover, I may point out that as from August next, all vaccine lymph

sold in this country will now, by virtue of the Therapeutic Substances Act, 1925, come under official control and have to conform to prescribed standards of potency and purity. My right hon. friend proposes to give some further consideration to the question, but it seems doubtful in view of the foregoing observations whether any departure from present practice would be justified.

Dr. DAVIES asked if Sir Kingsley Wood had seen the letter on this subject from Dr. S. Monckton Copeman, who was one of those who originally used "glycerinated lymph," which appeared in the *Times* that morning? Having in mind the prevalence of small-pox, would it not be possible to see that Government lymph was sold to practitioners.

Sir KINGSLEY WOOD said that there was no mention in the letter to the *Times* of the very important fact that under the Therapeutic Substances Act, which came into force in August, all lymph sold would have to come under official control and to conform to prescribed standards of potency and purity.

Sir W. DAVISON asked whether, having regard to the nature of an epidemic of small-pox, it would not be desirable to make some temporary arrangement until August to supply lymph to any practitioners who desired to have it.

Sir KINGSLEY WOOD said that in all cases where there was an epidemic arrangements were made with the medical practitioners for the supply of Government lymph. Under the Therapeutic Substances Act the natural desire which everyone shared that all lymph should be of the proper standard of efficiency would be achieved.

*Foot-and-Mouth Disease and Swiss Condensed Milk.*

Major AINSWORTH asked the Minister of Health whether, in view of the existence of foot-and-mouth disease in Switzerland, he was satisfied that the large quantities of condensed milk imported into Great Britain from that country were free from contamination, and, if so, how this deduction was formed.—Mr. GUINNESS replied: I am informed that the process of condensing milk necessitates the maintenance for some time of temperatures which are sufficient to destroy the virus of foot-and-mouth disease.

TUESDAY, MAY 31ST.

*Sickness in the Shanghai Defence Force.*

Mr. THURTLE asked the Secretary of State for War the number of troops of the Shanghai defence force who had been admitted to hospital as a result of sickness up to the time of the latest report received by his department.—Sir L. WORTHINGTON-EVANS replied: I am unable to state the total number of admissions to hospital, but the average weekly number of officers and men of the Shanghai defence force and the permanent garrison at Hong Kong, including Indian troops, who were in hospital during the four weeks ending May 20th was 15 and 860 respectively.

*Nervous Shock Caused by Motor Horns.*

Mr. PETHICK-LAWRENCE asked the Home Secretary whether he had received complaints as to cases of nervous shock caused by the unnecessary use of strident motor horns; and whether he proposed to take any action in the matter.—Colonel WILFRID ASHLEY replied: I am aware that unnecessary noise is sometimes made by motor horns. The point has been under consideration in connexion with the Draft Road Traffic Bill, but it seems to me more a question of education in the courtesies of the road than a matter for legislation, as it would obviously be extremely difficult to lay down a definite and enforceable standard of noise.

*Categories of Certified Milk.*

Mr. HURD asked the Minister of Health what was the number of licensed producers of graded milk, that was to say in the three categories of Certified, Grade A (T.T.) and Grade A respectively; the amount of the licence fee in each case and the total amount of such fees collected during the past year; and whether, in view of the deterrent effect of such fees upon the production of milk of guaranteed cleanliness, he would abolish these charges and regard the work of the Ministry's inspectors in this sphere as a public health service.—Sir KINGSLEY WOOD replied: The numbers of licensed producers of Certified, Grade A (tuberculin tested), and Grade A milk in England and Wales on March 31st last were 121, 150, and (at least) 266 respectively. The amount of the annual licence fee in each case is: Certified, £5; Grade A (tuberculin tested) or Grade A, £1 1*s.* (or if the milk is bottled on the farm, £3 3*s.*). The total amount of the fees paid to my department in respect of producers' licences for Certified and Grade A (tuberculin tested) milk for the calendar year 1926 was £699 18*s.* 6*d.* Licences to to producers of Grade A milk are granted by local authorities and my right hon. friend regrets that he cannot state either the precise number of such licences in operation or the total amount of fees paid in respect thereof. My right hon. friend has no reason to believe that the licence fees, which represent only a part of the cost of inspection and bacteriological examination, have had a deterrent effect on the production of clean milk and he does not at present propose to abolish them.

# Obituary.

## BRYDEN GLENDINING, M.S. DURH., F.R.C.S. ENG.

Mr. Bryden Glendining, who died at his home at Aspley Guise on May 19th, was born at Dunedin, New Zealand, in 1880 and came to England when he was 18 years of age. After five years' study at Guy's Hospital he graduated in medicine in the University of Durham in 1903 and was appointed house surgeon at Guy's. Later he was appointed resident surgeon at the Hertford British Hospital in Paris, and on the marriage of the Queen of Spain, went with her to Madrid, where he remained as her medical attendant for about two years. On his return to England Mr. Glendining became pathologist to the Chelsea Hospital for Women. He took the F.R.C.S. diploma in 1908 and graduated as M.S. Durh. in 1909. Two years later, whilst continuing work at the Chelsea Hospital, he became associated with the Cancer Research Laboratories of the Middlesex Hospital, where he was elected to an Emden Research Scholarship. For the following account of his work at this time we are indebted to one of his colleagues:—

"During his three years' tenure of this scholarship Glendining wrote no less than nine papers, nearly all of which were on the subject of malignant disease in its relation to gynæcology. Perhaps the most important of these was one entitled the Spread of Carcinoma by the Fallopian Tube, in which he put forward an entirely new view as to the invasion of the Fallopian tube by carcinoma from the uterus and ovary. He adduced evidence to show that it may be brought about 'by cancer cells which, coming in contact with the fimbriæ or being swept into the lumen engraft themselves upon the columnar cells, and thence travel to deeper parts.' This conclusion is of special interest in view of the opinion now held by most pathologists that pelvic endometriomatosis is in many cases due to shifting of the epithelium lining the tubes or uterus. With the caution which characterised him, he saw that the possibility of lymphatic permeation from the ovarian growths could not be entirely excluded."

This research was carried out at a time when Glendining was actively engaged in gynæcological practice. He was appointed assistant surgeon to the Chelsea Hospital and was also obstetric registrar to the Middlesex Hospital; in 1912 he became gynæcological surgeon to the Hampstead General Hospital. His future seemed assured both as investigator and surgeon, but in the following year a breakdown in health made temporary retirement necessary. In 1914, however, he returned to London to take up work again at the Chelsea and Hampstead Hospitals, also joining the surgical staff of the Duchess of Bedford's War Hospital at Woburn. This appointment re-directed his attention to general surgery and in this field also he showed unusual ability, his clinical and operative skill being reinforced by a wide knowledge of pathological processes. Apart from an interval of illness in 1916 he went on working at Woburn until 1925. The war hospital was closed in 1920 but Mr. Glendining continued his association with the cottage hospital until failing health made complete retirement from practice necessary. "The last years," we learn, "were borne with a patience and courage that nothing could dim. The blow of 1913 was one from which he never really recovered physically, but it brought into high relief the fine qualities of the man. The splendid work he did in the face of such a handicap will always be remembered by those who were in any way associated with him in it."

Mr. Glendining leaves a widow, the daughter of Captain G. E. Hodgson, and one son.

# INTER-STATE POST-GRADUATE ASSEMBLY OF NORTH AMERICA.

VISIT TO LONDON, JUNE 1ST–3RD, 1927.

## INAUGURAL MEETING.

ON Wednesday, June 1st, the Inter-State Post-Graduate Congress, which has its headquarters at Dartmouth House, Charles-street, Berkeley-square, commenced a three-day session, including lectures and visits to various London hospitals. A large gathering attended the opening ceremony, which was performed by Lord Reading, P.C., the chair being occupied by Lord Dawson of Penn.

Lord DAWSON (chairman of the British Committee), in welcoming the delegates from oversea, paid a tribute to the organising ability of the secretary of the Congress, Mr. Philip Franklin. Such a congress as this one should advance knowledge and stimulate thought to the advantage of all the nations of the world. After all, points of view in medicine were remarkably similar, and for medical men speaking the same language the exchange of ideas was a simple matter. In these days the calling and the scope of medicine covered a wider range and was broader-based than formerly. In years gone by the science was mainly concerned with the developed disease in the individual, whereas attention was nowadays largely devoted to what could be termed threshold symptoms, to that stage of deficient or dislocated function which was the precursor of actual disease states. Hence doctors were being brought more and more into relationship with people still active who wished to maintain the best possible health, and hence more was now learned about people's lives and work. This meant that the professional man was now in closer contact with national life, leading to a wider grasp of social problems and the establishment of a permanent and abiding influence on international relationships.

As representing this wider purpose nothing could be more fitting than the presence of the Marquis of Reading, the chairman of the Executive Committee of the English-speaking Union. Lord Dawson pointed out that few people had been privileged to serve in so many capacities as Lord Reading, enriching each by his learning, intuition, and sympathy. Lawyer, statesman, judge, ambassador, viceroy—Lord Reading was truly a citizen of the world. Lord Dawson concluded by promising that London medical circles would offer of their best to those who had come across the Atlantic.

Lord READING said it was his privilege to extend, on behalf of the English-speaking Union, a very cordial welcome to the delegates to this Congress. He was delighted, as always, to perform any function he could, especially one whose object was to secure an even closer relationship between the medical men of the two great countries; it must be, he was convinced, to the benefit of both. He had heard that a man at 40 was either a fool or his own doctor, and he had often thought that he might be both. Such a congress as this went even beyond the objects of the English-speaking Union, for, as it was true that science belonged to no particular nation, gatherings of this nature were really more than international; they belonged to the universe, seeing that all discoveries given to the profession were for the benefit of the whole of humanity. A meeting of representatives of many States and of Canada with its resultant contacts here would, he hoped, help to strengthen the ties already existing between the two nations. One of the strongest links in this association was provided by the unity of language spoken by all the participants in the congress. Added to this was the fact that in both nations the tradition was the same. He trusted, indeed he felt confident, that when the members of the congress returned to their own homes they would carry with them thoughts and recollections of this visit, and that whatever other countries their itinerary might include, they would still regard this country as the nearest to them, and imbue in others a like idea. That would tend to strengthen still further what he regarded as the most important factor in the advance of human civilisation—namely, that the American and the British people should understand each other, and that they should, wherever possible, work for the common purpose of benefiting humanity.

Dr. W. B. PECK, on behalf of the American visitors, thanked Lord Reading and Lord Dawson for their words of welcome and the Union for its hospitality. The Congress, he said, represented 38 States, and some practitioners from Canada were also present. Medical men did not, as a body, usually interest themselves in State matters, and they were bad politicians at best, but it was a constant stimulus to the doctor to know that he had, in his work, the encouraging sympathy of those who were highly placed in the Government of the country. In London they did not seem to be in a strange land; it was like coming back home.

## GALL-STONES.

*The opening Paper read at the First Session.*

BY SIR CRISP ENGLISH, K.C.M.G., F.R.C.S.

OPINIONS about the treatment of gall-stones mainly differ on two questions: (1) what are the indications for operation? and (2) should the diseased gall-bladder be excised, or should it be emptied and drained? To get a true perspective we must appreciate the remarkable frequency of gall-stones, and we must study the types of persons who manufacture them.

### *The Frequency of Gall-stones.*

Their frequency is astonishing. The available statistics vary considerably; but whatever allowances may be made, it is evident that quite a large percentage of any population possesses gall-stones. Statistics taken from hospital post-mortem records put the percentage at from 3 to 15 when all ages are included, and a good deal higher if adults only are considered. At St. George's Hospital, in a series of over 4000 consecutive post-mortem examinations, gall-stones were found in 5·7 per cent. The figures of last year were examined as regards autopsies on persons over 40 years of age, and stones were found in 10 per cent. of the men and 25 per cent. of the women, although in only one instance had the patient been admitted for gall-stone disease. In series from other hospitals higher figures are often recorded, and it may be assumed that in better-class patients gall-stones are even commoner. On the other hand, A. J. Walton, in a long series of post-mortem examinations at the London Hospital, found a percentage incidence of 3·48, a figure which is lower than most, and suggests that they are less frequent amongst the patients of the East End of London.

Dr. Arthur Hurst estimates that over 20 per cent. of persons over the age of 20 have, or are going to have, gall-stones; that means 4 millions of people in this country, and a great many more in America. Supposing that this is an over-estimate and there are only 2 millions, the number still remains remarkably high. Of 100 people in this room, Hurst says that 20 have, or are going to have, stones. Put it, if you will, at 10; the point that matters is that in all probability none of these has, or is going to have, symptoms. In Piccadilly or Bond-street, where the well-favoured congregate, one person in every ten has gall-stones, but you will see no jaundice, you will not find any of them writhing in colic, you will get no evidence of flatulent dyspepsia. Fortunately, stones, although so very common, are usually silent or latent, or the symptoms are so mild that they escape observation.

### *Types of Patient.*

Many of the gall-stone patients enjoy excellent health apart from their gall-bladder trouble and have

normal habits of life. The description I am now giving carries no reflection on these, but in the larger number of cases the patients have erred in two directions—too much intake and too little output. Many of them recall the type of persons so well described by the epitaph in the country churchyard as "a lady of bilious temperament and lazy habits of life."

The predisposing causes in the production of gall-stones are well described by Sir Humphry Rolleston. He points out that the most important are a sedentary life and want of exercise. Stones are rare in outdoor labourers; they occur in pet dogs, but are absent in wild animals; they affect hard-working literary men and prisoners confined to gaol. I have had several cases in prison attendants, which is eloquent testimony to the good feeding provided by the Government. Gall-stones are found more frequently amongst the rich, who are lazy, clerks and devoted men of business, shoemakers, and in the poor of workhouses and asylums, than in active persons, whether the well-to-do or tramps. At Carlsbad, of 472 patients under treatment for cholelithiasis, more than 50 per cent. were professors, teachers, officials, and clergymen.

The effect of famine conditions is well shown by statistics from a Leningrad hospital. In 1914 the incidence of gall-stones in the total admissions was 0·47 per cent.; in 1919 it had fallen to 0·1 per cent. Mr. E. P. Pratt has worked out for me the corresponding figures at St. George's Hospital. During the three years before the war the ratio of gall-stone cases to the total admissions was 1 case in 156 admissions; in the three years following the war the ratio was 1 in 148, a slight increase. An interesting point, however, is that patients below the age of 40 formed 26 per cent. of the total before the war, but only 11 per cent. after the war, which suggests that those who were active during the war did not readily form stones, and fits in with the fact that gall-stones are rare in soldiers. It is thus evident that the type of persons most liable to cholelithiasis are not the best of subjects for operations upon the upper part of the abdomen.

*Operative Indications.*

In view of the remarkable frequency of gall-stones it is evident that their mere presence is no indication for operation; obviously the great majority of those who own them get through life comfortably without ever being aware of their existence. It is sometimes asserted that gall-stones are never present without causing symptoms. This surely cannot be true, for if so there would be two or more millions of people in England alone suffering from symptoms due to gall-stones.

When it is remembered, too, that the majority of the patients are not good surgical subjects it is obvious that the question of operation must be carefully considered in each individual case. My contention is that any policy which urges that the diagnosis of gall-stones should be followed by operation, more or less as a routine, is wrong. The pros and cons should be considered in every case; the general health of the patient must be investigated very carefully, and the risk of future trouble in connexion with the stones should be estimated as far as possible. Often the best advice we can give to the patient is to undergo a full course of medical treatment during a period of observation. There will still remain, however, a very large number of cases in which operation is clearly the wiser course. This applies particularly to those subjects who are otherwise active and healthy, it applies to the cases in which there have been recurrent attacks of colic, severely handicapping the patient, and it applies to nearly all cases in which there have been stones in the ducts or some other complication, such as an acute infective cholecystitis.

Incidentally, the number of stones present has some influence on the need for operation, and some idea of the number may often be got from X ray photographs or from the size of any stones that are passed. A persons fated to have gall-stones would be wise, I think, if he had any choice in the matter, to have one large stone. Such stones are apt to lie comfortably in the gall-bladder; they cannot shift, and most often they are discovered accidentally. Large numbers of small stones give rise to little trouble, but some of them are apt to increase to a bothersome size. The troublesome size is that which leads to a tight fit in the ducts. When there are 20–30 stones in the gall-bladder they are likely to be of this size and then most often lead to acute troubles.

*Gall-stones and Cancer.*

The fact that gall-stones are often associated with cancer of the gall-bladder is sometimes held as an argument in favour of pressing operation. Hurst tells us that there are 4 millions of people with gall-stones in England; cancer of the gall-bladder is relatively an uncommon disease, so that it becomes clear that only a very small proportion of gall-stone patients develop carcinoma of the gall-bladder. Does this risk justify the 1 per cent. mortality risk of operation? Another point emerges from the study of series of cases—namely, that the majority of patients in whom stones accompany growth of the gall-bladder have had nothing in their previous history to point to gall-stones, and so prophylactic operations would not have been possible.

It is very difficult to get evidence on this point from statistics, for they vary so considerably. It seems quite clear that when carcinoma forms it is usually secondary to stones and that the stones found are not the result of the carcinoma. Stones occur in 90 per cent. of the cases of primary carcinoma and only in 15 per cent. of the cases of secondary carcinoma. In the London Hospital series of cases, Walton records 18 cases of carcinoma in 409 gall-stone cases; Smithers found 31 cases in 1000, whilst in the St. George's Hospital series there were 10 cases in 228, a percentage of 4·7. But it must be remembered that these figures represent the most serious of gall-bladder cases, and take no account of the innumerable patients who never enter hospital.

The risk of carcinoma scarcely seems to me great enough to warrant its use as a pressing argument for operation, and I find that when members of our own profession unluckily develop gall-stones, they are inclined to take this view when when deciding what shall be done for themselves.

*Cholecystectomy.*

Excision of the troublesome gall-bladder is an attractive operation; when the appendix is so easily dealt with by removal, why not treat the gall-bladder in the same way? But the matter is not so simple as that. Many of the patients are little suited for what is sometimes called surgical interference; they are often much too fat and flatulent, and liable to chest complications. Moreover, patients of this type are apt to keep their gall-bladders tucked away far back in the depths of their voluminous abdomens, and for some of these the simpler operation of cholecystostomy is much safer. In any case, excision cannot be done unless the surgeon has decided that the bile-ducts are surely patent.

There is another point in connexion with this operation which has a great influence on the ultimate result. The bed from which the gall-bladder is excised must be covered with peritoneum; if a raw surface is left, adhesions will form between the pyloric end of the stomach, or other neighbouring parts, and the under surface of the liver. In many a case the ultimate results of the operation have been unsatisfactory owing to these adhesions.

A practical difficulty is that patients often walk into one's consulting-room or into hospital and demand removal of their gall-bladders. A surgeon should never promise this; if he is old enough, he will never even promise to find gall-stones, whatever may have been the clinical signs and whatever the X rays may have shown. I have had several instances in which a complete investigation has led to a confident

diagnosis of gall-stones and in which shadows have even been seen in the gall-bladder, yet at operation a healthy gall-bladder has been found of that delightful blue colour which we know spells innocence, and a chronic duodenal ulcer has been discovered to explain the symptoms instead. The diagnosis between these two conditions is notoriously difficult and, in fact, sometimes they coexist; in these cases I believe that it is the duodenal ulcer which has been mainly responsible for the symptoms. This impresses on one the very great importance of making a thorough examination of all the neighbouring parts, and especially of the stomach and duodenum, before the gall-bladder is attacked.

There are some cases in which the wisdom of cholecystectomy will be doubtful after the usual thorough examination of the whole biliary system. In cases of this type I am in the habit of doing an operation which is a compromise between cholecystectomy and cholecystostomy. The gall-bladder with its contents can be removed at its junction with the cystic duct and then, instead of closing the duct, a drainage-tube can be put into it. In this way the advantages of excision and drainage are combined, and the operation is often a much safer one than the ordinary excision and closure. It involves a slight risk of leaving raw surfaces, and this part of the operation requires very careful attention.

Broadly speaking, cholecystectomy is the operation of election. The absence of a gall-bladder brings no bad results. R. P. Rowlands has reminded us that many animals are luckily born without gall-bladders, and numerous human beings have lost it to enjoy better health. Removal of the gall-bladder with the stones gives the best chance of permanent cure; it is often a simpler operation than drainage, its risk is usually no greater, and convalescence is much shorter. The wounds heal quickly, whereas the drainage of cholecystostomy is often prolonged, the sinus taking some time to close. The best plan is to keep an open mind before operation, and make no decision until the local conditions have been actually seen. If the operator is in doubt, let him try to imagine what he would like done for his own gall-bladder if he were the patient.

In conclusion, I would urge that there must be no hard-and-fast rules in our attitude towards gall-stones. Stones are very common; often they give very little trouble; their owners are far from being ideal subjects for major surgery; so each case must have separate consideration. If stones give rise to serious or repeated trouble, and if they are a definite handicap to the patient, then they should be dealt with, and cholecystectomy is the operation of choice.

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## SHOCK TACTICS IN PULMONARY TUBERCULOSIS.

BY L. S. T. BURRELL, M.D., F.R.C.P.

IN cases of pulmonary tuberculosis a shock or reaction may be followed by disastrous results. On the other hand, it may happen that the bad effects of the reaction soon disappear and the patient is actually better than he was before it occurred. This improvement is not entirely the result of a specific effect. I am not concerned in this paper with whether or not certain substances—for example, sanocrysin—have or have not a specific action, but I believe that in their action there is some other factor apart from anything specific. Not only tuberculin, but also copper, gold, normal horse serum, T.A.B., &c., can set up a reaction which may be followed by a definite improvement or may cause a rapid spread of the disease. A fall of temperature must not be taken as the sole index of improvement for it usually occurs in cases of shock; it is seen, for instance, in perforation in typhoid fever. Certain drugs such as cryogenin will keep a temperature normal in pulmonary tuberculosis, but they do not affect the course of the disease.

### *Clinical Records.*

I will give a brief description of a few cases to illustrate improvement following reaction resulting from different causes.

CASE 1.—A girl of 17 began to ail at the end of 1922, and in April, 1923, she had extensive signs of tuberculosis in the left lung, had lost 20 lb. in weight, was febrile, and had sputum-containing tubercle bacilli in large numbers. Left artificial pneumothorax was induced and a year later she was free from symptoms and had gained 52 lb. in weight. She kept well until the beginning of 1926, when after a febrile attack, which was at first thought to be influenza, signs were found in the right lung, tubercle bacilli reappeared in the sputum, and she was admitted to hospital with a temperature as shown in Fig. 1.

On April 1st, 1926, she was given an intramuscular injection of 10 c.cm. of an antituberculous serum which had been prepared by Capt. S. R. Douglas. The same dose was repeated on the 5th, 10th, 15th, 20th, and 26th with very little result. She was then extremely ill and wasted and apparently dying, so on May 3rd I gave 40 c.cm. of the serum which was followed by a big reaction and definite lowering of the temperature afterwards. On May 10th I gave another 40 c.cm. of the serum and again there was a reaction as seen in the chart.

On May 17th I was giving more serum and when 20 c.cm. had been injected she had anaphylaxis—that is to say, she suddenly collapsed, stopped breathing, became pulseless, lost control of her bladder and rectum, and appeared to be dead. She recovered, however, and from that time she began steadily to improve. The temperature became normal, the pulse-rate fell from 120 to 80, tubercle bacilli disappeared from the sputum, and at the end of the year she was in a sanatorium walking five miles a day.

CASE 2.—A man of 22 developed signs of pulmonary tuberculosis early in 1921, and at the end of the year went into a sanatorium. He then had signs of disease all over the right lung, sputum loaded with tubercle bacilli, and an evening temperature of 102° F. Right artificial pneumothorax was started in December, 1921, but he remained ill and febrile until May, 1922, when he had a sudden reaction with increase of fever and pleural effusion developed.

The sudden nature of this reaction and the fact that the intrapleural pressure went at once from −6 to +8 suggests that a perforation of the lung had taken place. Within a month not only did the effects of the reaction wear off, but the temperature became normal and his whole condition gradually improved and he left the sanatorium free from symptoms in May, 1923. The pneumothorax was kept up until May, 1924, and since then he has kept perfectly well. Now, three years later, he is still free from symptoms and is leading a normal life.

CASE 3.—A woman of 26 with extensive signs in the right lung, tubercle bacilli in the sputum, temperature 101° F., and signs of toxæmia, was being treated by artificial pneumothorax. During the fifth refill, when 300 c.cm. of air had been introduced and the intrathoracic pressure was −6 +1, she suddenly became very cyanosed, gasped for breath, and lost consciousness. She recovered in half an hour and afterwards began to improve. Fig. 2 shows the temperature. In this case the improvement did not last long; she relapsed and died about a year later.

CASE 4.—A woman of 30 had active tuberculosis in both lungs, tubercle bacilli in the sputum, and fever, as seen in Fig. 3. A severe reaction followed the intravenous injection of 0·5 g. sanocrysin, but when she had got over this the temperature remained normal. She steadily improved and lost the tubercle bacilli, but this may have been due to the rest in bed and the action of the sanocrysin which was continued in smaller doses. Anyhow the fall in temperature did directly follow the reaction.

CASE 5.—A man had a tuberculous sinus from the transverse process of one of the vertebræ. This showed no sign of healing in spite of prolonged treatment. He was having mild sunlight treatment, and one day after an exposure to the sun, which was more than double the usual, he had a reaction and high temperature and felt that he had done himself harm. But the sinus began to heal after this and has shown no sign of breaking down since.

### *The Dangers of Shock.*

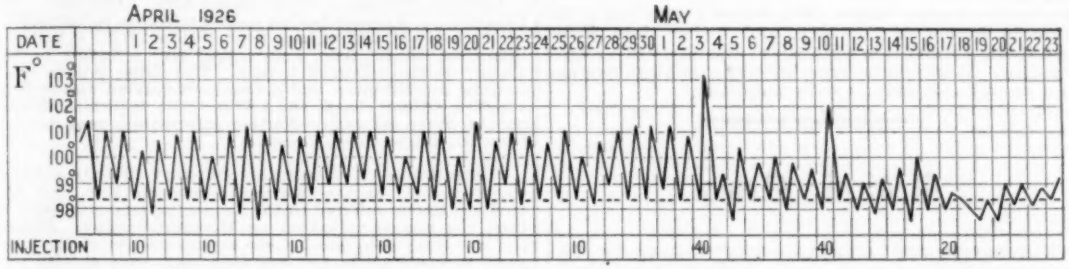
Dr. R. C. Wingfield treated a series of cases with intravenous injections of colloidal copper. He showed me his charts, and in some cases his results were strikingly good, but he found the reactions to be so severe and alarming to the patient that he discontinued the treatment.

I started by saying that these reactions may lead to disastrous results, and Fig. 4 shows the temperature of

a patient following only 10 c.cm. of serum. He never rallied and died in a few weeks. Compare this result with the first one I described where 40 c.cm. of the serum were used and the reactions followed by improvement. In Case 2 the patient was doing badly until a sudden rupture of lung caused a violent reaction, after which he made an uninterrupted recovery. Yet I regard rupture of lung as one of the most serious complications of artificial pneumothorax. Again, in Case 3, the patient seemed definitely to improve after pleural shock, but this accident, though fortunately very rare, is the one most dreaded in all cases where the pleura has to be punctured. It is not only in graded doses mild reactions may be produced when other treatment has failed. In Case 1, for example, I gave six small doses of serum without any result, and as the patient seemed to be steadily dying I increased the dose and a reaction followed. The temperature was definitely lowered, and it seemed to me wise to continue the serum in spite of the reaction. I had, of course, no intention of causing the serious shock which followed a subsequent injection.

By causing a series of slight reactions I have occasionally seen improvement, though one does not see the striking and sudden improvement that may follow a serious shock. Usually the disease goes on

FIG. 1.

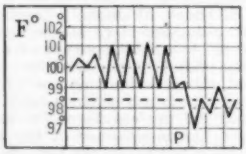



Temperature chart in a case of pulmonary tuberculosis treated by injections of serum. The figures at the bottom of the chart show the number of c.cm. of serum given on the various days.

tuberculosis that one sees improvement following shock. During the war I treated several cases of enteric with colloidal gold given intravenously. The patient generally had a rigor after the injection and the temperature would then fall to normal for a few days and sometimes would remain normal.

We know the effect of intravenous injections of mercuric chloride in cases of pneumonia or other acute infections. It is quite impossible to believe that such a minute dose of the drug can have any direct effect on the micro-organisms. Again, certain non-tuberculous conditions have been treated by shock produced by the intravenous injection of a unchecked in spite of the reactions. In children of 14 to 18 years of age one frequently sees a very acute form of pulmonary tuberculosis, and the outlook is always grave, but in these cases I have seen rapid improvement following reactions. In such children the disease often spreads very quickly and I usually induce an artificial pneumothorax as soon as possible. If the disease is spreading in the other lung the pneumothorax cannot be kept up. I have known cases where only two refills have been given when the treatment had to be stopped, yet steady improvement followed. The very temporary and partial rest given to the lung can hardly account for the improve-

FIG. 2.




Temperature chart showing the effect of pleural shock occurring at P.

FIG. 3.

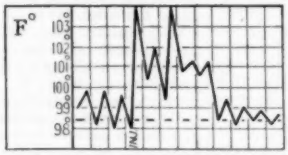



Chart showing the effect of an intravenous injection of 0·5 g. sanocrysin.

FIG. 4.

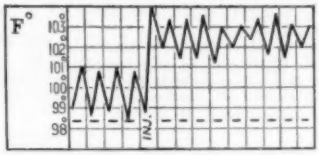



Chart showing the effect of an intramuscular injection of 10 c.cm. serum.

foreign protein. It would seem therefore that the action is largely non-specific and that a shock may stimulate certain unknown constituents of the body and do good or it may injure them and do harm.

In each one of the cases I have described the reaction was accidental and I was always alarmed at the time. I believe that an acute flare-up may follow a reaction, and that this may be the beginning of a rapid spread of disease from which the patient soon succumbs. Usually, however, he recovers from the reaction and is apparently neither worse nor better, but, as I have said, a considerable number of patients show a steady and continuous improvement after they have recovered from the initial shock.

### *Indications.*

When we consider these facts with a view to treatment we are at once faced with the difficulty that the reaction may make the patient worse or even prove fatal. It certainly does not seem to me to be justifiable to cause such violent reactions as I have described intentionally, but I think that by small or ment, and I suggest that it is due to the shock or reaction caused by the pneumothorax. In severe acute cases I sometimes collapse one lung with a large initial quantity of air and give no refill but allow the lung to re-expand. I have seen this method check the acute spread of the disease and be the starting-point of improvement.

In treating patients by artificial pneumothorax I now give smaller refills than formerly, and I very rarely see a reaction. Some years ago I might give as much as 800 or 1000 c.cm. of air as an initial dose. In those days reactions were frequent, but they were not uncommonly followed by a dramatic steadying of the temperature. In another type of case the patient keeps fairly well in himself, but in spite of long periods of rest the temperature refuses to settle, remaining between 99°–100° F. and his condition shows no signs of improvement. Now sometimes if the temperature is ignored and a little exercise is allowed the patient promptly begins to get better. In such cases I have seen the same result follow the use of tuberculin.

I want, however, to make it quite clear that I do not advocate exercise in febrile cases. On the contrary, I regard rest as far more important than anything else in the treatment of pulmonary tuberculosis. A woman who was getting on very well left a sanatorium and was having what she called sanatorium treatment at home. One afternoon she could not resist joining in a game of tennis. This produced a severe reaction, and she died soon afterwards of acute tuberculosis. I have seen many cases like this, and I know too well the danger of overexertion in this disease. I know too well the danger of any reaction, however caused, and I always do my utmost to avoid one in any case that is doing well. But when one is faced with a patient who fails to respond to any treatment and who is steadily getting worse one cannot forget that a shock may turn the scale in favour of recovery, and rather than allow him to die I think it is right to try the effect of a slight reaction. It should be done with the greatest caution and its risks should never be forgotten.

# Medical News.

UNIVERSITY OF OXFORD.—The University has accepted with gratitude the sum of £1000 offered by the widow and sisters of the late Dr. George Herbert Hunt for the purpose of establishing a medical travelling scholarship in memory of him.

RONTGEN SOCIETY.—A general meeting of this society will be held on Tuesday, June 14th, at 8.15 P.M., in the Barnes Hall, Royal Society of Medicine, 1, Wimpole-street, Cavendish-square, W. 1. At 8.30 P.M. Sir J. J. Thomson, O.M., F.R.S., will deliver the Tenth Silvanus Thompson Memorial Lecture, entitled the Structure of the Atom and Radiation.—The Eighth Mackenzie Davidson Memorial Lecture will be delivered by Sir Humphry Rolleston at the same place on Thursday, June 30th, at 8 P.M. The subject will be Protection and other Radiological Problems. Additional tickets for admission to the above lectures may be had from Mr. Geoffrey Pearce, F.R.P.S., 33, Newton-street, London, W.C. 2.

UNIVERSITY COLLEGE, DUBLIN.—The vacancies left on the staff of the College by the death in 1925 of Dr. E. J. McWeeney, professor of pathology and bacteriology, and by the resignation, in the same year, of Dr. J. F. O'Carroll, professor of medicine, have now been filled. In each case the duties of the chair are divided. Mr. T. T. O'Farrell is appointed Professor of Pathology; Dr. W. D. O'Kelly, Professor of Public Health and Bacteriology; Dr. Henry F. Moore, Professor of Medicine; and Dr. James N. Meenan, Professor of Systemic Medicine.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Mr. T. W. Letchworth will give a special clinical demonstration at the Royal Eye Hospital on Thursday, June 9th, at 3 P.M. This demonstration will be free to members of the medical profession. The Chelsea Hospital for Women will hold a two weeks' course in gynæcology from June 8th to 21st; instruction will be by operation and by lectures (fee £5 5s.). From June 8th to 29th an afternoon course will be provided at the Central London Ophthalmic Hospital, with lecture-demonstrations and instruction in the out-patient department. An operative class will be arranged if desired—the fees being £3 3s. for the clinical course and £5 5s. for the operative course. The Children's Clinic, in conjunction with several hospitals, will give a special course in diseases of children from June 13th to 25th (fee £2 2s.). The Hospital for Diseases of the Skin, Blackfriars, will hold an afternoon course from June 20th to July 1st; on each Tuesday special cases of interest will be shown. From June 27th to July 9th there will be a course at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, during which the entire practice of the hospital will be open (fee £2 2s.). Practical courses in anæsthetics and obstetrics can be arranged for by the Fellowship, which also makes arrangements for clinical assistantships in gynæcology. A general course of instruction is also provided at the associated hospitals, for which a separate programme is published. Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

**Sir James Purves-Stewart has been elected a foreign member of the Copenhagen Medical Society.**

RADIUM INSTITUTE, MANCHESTER.—At the annual meeting of the Manchester and District Radium Institute it was reported that the number of attendances had increased to 6775 from 6479 the previous year. Longer treatment had been employed in certain types of cases. There are now 11 beds for in-patients in the institute.

THE medico-educational monthly journal, *The Child*, founded in 1910 and edited for nearly 17 years by Dr. T. N. Kelynack will, after the issue of the June number, be conducted under the direction of an editorial board. It will be published, as before, by Messrs. John Bale, Sons and Danielsson.

INTERNATIONAL POST-GRADUATE COURSE AT CARLSBAD.—A course having special reference to balneology will be held at Carlsbad from Sept. 18th to 24th. It is stated that Prof. H. H. Dale, F.R.S., will give a lecture on the Theory of the Action of Insulin. The course is open to all medical practitioners, and a Czecho-Slovakian visa will be supplied without charge and a 33 per cent. reduction allowed on the State railways. Further information may be had from Dr. Edgar Ganz, Carlsbad.

METROPOLITAN HOSPITAL SUNDAY FUND.—At a reception held at the Mansion House on May 31st Mr. Holland Martin referred to the decreasing amounts received from the annual collection on Hospital Sunday. During the war the public had become accustomed to giving large sums to hospitals in the war area, and their charity was afterwards transferred to the London hospitals. Between 1920 and 1926, however, the receipts fell from £121,000 to £87,000. Sir George Makins, F.R.C.S., chairman of the distribution committee, stated that almost the whole of the money collected went to the hospitals.

HOSPITAL PATIENTS AND NOISES.—Some time ago the cinemas in Leicester were asked to screen requests to motorists not to use their hooters unnecessarily when passing the Royal Infirmary. A private hospital in that city has just adopted a method of its own in the hope of reducing the noise of traffic upon its front where there chances to be a steep gradient. White lines have been painted on the road at each corner of the building and large white boards have been placed on the walls with the words "speed limit, 8 miles," painted in bright red letters.

ASSOCIATION OF PORT SANITARY AUTHORITIES.—In recognition of his services as founder and hon. secretary of this association since its inception in 1898, Dr. J. Wright Mason, of Hull, was entertained at a complimentary luncheon at the Charing Cross Hotel on May 27th. After the President (Councillor J. E. Jones, of Bristol), Dr. W. M. Willoughby and others had eulogised Dr. Mason's work on behalf of those engaged in port health administration, Alderman Clough (River Tyne P.S.A.) presented the guest of honour with an inscribed silver salver and a cheque which had been subscribed for by members of the association. After gratefully acknowledging the presentation, Dr. Mason gave an interesting account of the beginnings of the association and the useful work it has since accomplished. Nearly every port medical officer was present at this luncheon to their senior colleague.

BIRMINGHAM HOSPITAL CENTRE.—As we recently recorded, the committee charged with laying out the site for the new Birmingham Hospital Centre at Edgbaston appointed a deputation to visit a number of continental hospitals, in order to form an opinion upon the relative advantages of the pavilion plan and of a large concentrated building. The deputation consisted of Dr. J. G. Emanuel, Mr. J. B. Leathes, Mr. H. H. Sampson, and Mr. A. H. Leaney, and visits were paid to Rome, Genoa, Naples, Lyons, Paris, Hamburg, Copenhagen, Leipzig, Berlin, and Helsingborg in Sweden. It was found that in most places the hospitals were built on the pavilion system, the pavilions usually being widely separated and therefore occupying a large area. At Copenhagen, however, it has been decided to abandon this system owing to the heavy cost of administration, and the deputation report that "all authorities agree that the system of pavilions spread over a large area is costly to build and to heat, and very expensive to administer." Wherever they went they found hospitals to contain from 1000 to 3000 beds being built from 3 to 5 miles away from the centre of the city, though the out-patients' departments remained urban. Most wards were badly overcrowded; there were more medical than surgical beds; and "in no case was the work anything like so intensive as in the Birmingham voluntary hospitals."

ROYAL SUSSEX COUNTY HOSPITAL.—Mr. Bernhard Baron has contributed £10,000 to the Centenary Fund of this hospital.

GARDEN FÊTE AT GUY'S HOSPITAL.—On Thursday, June 9th, at 3 P.M., the Lady Mayoress of London, accompanied by the Lord Mayor and sheriffs, will open a garden fête arranged by the Guy's Hospital Ladies' Association in the hospital grounds.

BELGRAVE HOSPITAL FOR CHILDREN.—The report for 1926 of this institution in the Clapham-road, a new wing of which was opened by the Prince of Wales in March last, states that the out-patients' department with over 66,000 attendances is "lamentably overcrowded." This is 8000 more attendances than in 1924 and if the increase continues and more convenient premises are not obtained, "the point will soon be reached when sick children will have to be denied relief." The provision of additional departments has had the inevitable effect of considerably raising the cost of each in-patient. A clinic has been established in the out-patients' department to which all fractures are referred, and it is hoped that much valuable information will thus be gained.

A YEAR OF ST. BARTHOLOMEW'S HOSPITAL.—The treasurer, Lord Stanmore, reports an increase of in-patients last year from 8655 to 9233; cases of street accidents or illness numbered 2972. The steady fall since 1920 in the attendances at the special treatment centre of the venereal department reflects the general reduction throughout the country of the incidence of the disease. The cost per patient is, however, so much above the average of other venereal clinics that a scheme is under consideration for transferring the work to the hospital itself. The League of St. Bartholomew's Hospital Nurses, which now has 1200 members, is asking for the means to start a country club to which nurses and probationers can go for week-ends or longer periods.

THE LATE DR. J. BUSFIELD.—Dr. James Busfield, who died on May 19th at the age of 66, was a well-known Enfield practitioner who had practised in the district for more than 12 years. He was a Yorkshireman by birth, and before taking up medical work was an analyst in the Inland Revenue Laboratories at Somerset House. This appointment began in 1884, and in the following year he won first-class honours and the bronze medal in technology at the City and Guilds Institute; he also became a Fellow of the Institute of Chemistry. Later he entered Charing Cross Hospital Medical School without, however, giving up his work at Somerset House, which continued for ten years. In 1890 he won the Pereira Prize and five silver medals at the hospital, and in the following year qualified as M.R.C.S. Eng. Settling in practice at Clapham Park, Dr. Busfield became medical officer to the Clapham General Dispensary, and later on, before going to Enfield, he was for some years in partnership at Claygate in Surrey. At Enfield he took a keen interest in municipal and national politics, and since 1922 had represented the Enfield Western Division on the Middlesex County Council, serving on the mental hospitals and other committees. At the time of his death he was president of the Enfield Medico-Ethical Society and was a member of the staff of the War Memorial Hospital. He was also president of the local tennis club. Dr. Busfield leaves a widow and two sons and a daughter.

BOMBAY MEDICAL COUNCIL.—At the meeting of the Council held on Feb. 25th, Sir Norman Walker, representative of the General Medical Council of Great Britain, and Colonel R. A. Needham, who accompanied him on his tour through India, were present by invitation.—The case of Mr. Balvantrai Naranji Desai, practising at Vadi Falia, Surat, was concluded, and it was decided that his name be struck off the Register for unprofessional conduct—viz., advertising—the purport of the advertisement in leaflet form being as follows: "Remedy for cent. per cent. cure of Hydrocele. By Balvantrai N. Desai, L.M.S."—An application from Mr. Narayan Moreshwar Bhagwat for permission to be registered under Section 7 (3) of the Bombay Medical Act, on the ground that he had been working as a medical practitioner for the past 17 years, was rejected as the applicant had not completed a course of training in any medical institution.—An application from Shaikh Abdul Kadir was also considered, and taking into consideration the services rendered by him during the war and his training at the Grant Medical College, his application was favourably considered as a special case.—The name of Muhammad Sahib Bakshubhai was erased from the Register owing to his conviction for a cognisable offence.—A revised code of medical ethics was adopted, copies being forwarded to all registered medical practitioners for information and guidance.—The meeting closed with a vote of thanks to the President, Major-General A. Hooton, I.M.S., in view of his impending retirement before the next meeting.

WOMAN POLICE DOCTOR.—The Manchester Watch Committee has decided for the first time to appoint a woman doctor to a position in the city police force. It will be her duty to deal with all women who come into contact with the police, and especially with all cases of assault on children, through the whole of the Manchester district.

HOLIDAY CRUISE FOR MEDICAL MEN.—The travel section of the *Bruxelles-Médical* has arranged a three weeks' course to Bordeaux, Lisbon, Tangier, Algiers, Palma, Barcelona, and Marseilles, starting from Le Havre on August 10th or from Antwerp. Particulars may be obtained from Dr. F. G. Imianitoff, M.R.C.S., at 29, Poulevard Adolphe, Max, Brussels.

PROGRESS OF WEST LONDON HOSPITAL.—It was stated at the annual meeting last week that 1926 established a record in the number of patients dealt with—3135 in-patients and 43,417 new out-patients. It is expected that the nurses' home will be extended during the year and a new casualty department is to be begun at the earliest possible moment. During the last two years 76 beds have been added.

THE LATE DR. J. T. HAWORTH.—At the age of 65, Dr. John Thomas Haworth, of Filey, died on May 22nd after a short illness. The son of a Filey doctor, he received his medical education at the University of Glasgow and took the Scottish triple diploma in 1888. At first in partnership with his father, he had an extensive practice in the neighbourhood and for the past 31 years had been medical officer of health for the Filey district of the Scarborough Union. Dr. Haworth was one of the oldest members of the local golf club, being at one time its captain, and was a prominent Freemason. He leaves a widow and one son.

A CURIOUS BARGAIN.—Some time ago Mr. Alfred Ramsden, a retired Dewsbury draper, entered into an agreement with the Dewsbury Corporation that in return for £25 they would maintain and keep in good order three graves in one enclosure, with their monument and kerbs, in the consecrated portion of Dewsbury Cemetery. Mr. Ramsden has given £1000 to the Dewsbury and District Infirmary on condition that the board undertake in perpetuity to see, by periodical inspections, that the Corporation keep their agreement.

DONATIONS AND BEQUESTS.—The late Mr. Fenwick Richards, of Bristol, left, among other bequests, £1000 each to the National Lifeboat Institution, the Royal Bristol Hospital for Sick Women and Children, the Bristol Eye Hospital, the Orthopædic Hospital, Bristol, the Cancer Hospital, Brompton, the Consumption Hospital, Brompton, and the Bristol Dispensary, Castle Green.—The late Mr. Samuel Scott Stanley, of Grove House, North-lane, Roundhay, Leeds, in addition to other legacies, left £15,000 to Leeds Infirmary, £5000 to Leeds Dispensary, £2000 to the Leeds Women's and Children's Hospital, £1000 to the Society for the Prevention of Cruelty to Children, £1000 to the Society for the Prevention of Cruelty to Animals, and £500 to the Leeds Maternity Hospital.

THE LATE DR. W. G. PINCHING.—Dr. William Guy Pinching, who died on May 10th, at the early age of 48, had practised in Frampton for the last 15 years. He was educated at the University of Oxford and at Guy's Hospital, where he played regularly in the Rugby fifteen. He qualified as M.R.C.S. Eng. in 1908 and held the appointments of house physician and house surgeon at Guy's, afterwards going to Pendlebury as resident medical officer to the Manchester Children's Hospital. At Frampton, Dr Pinching was identified with the cricket and football clubs and with many other social activities. Amongst other local appointments he was medical officer of health for Wheatenhurst Union. He leaves a widow and two children.

ROYAL FREE HOSPITAL.—The 248 beds were last year occupied by 4729 patients, who stayed an average of 17·19 days and cost £4 6*s.* 11*d.* per week each, an increase of 1*s.* 1*d.* over the cost in 1925. The usual increases in the out-patients' and casualty departments are reported. Eight beds in single rooms were allocated to private paying patients, and the arrangement has given satisfaction and produced considerable income. The committee record with great regret the retirement of Dr. W. P. S. Branson, who had been physician to the hospital since 1908; he has been elected a consulting physician. Increased accommodation is badly needed, and it is proposed to celebrate the centenary of the hospital next year by erecting a children's wing, providing 30 or 40 rooms for private patients and more than a dozen other adjuncts upon the adjoining property, about an acre in extent, in Gray's Inn-road. For these purposes £200,000 will be required.

# Medical Diary.

*Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.*

## SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY, June 9th.—LARYNGOLOGY AND OTOLOGY: Combined Summer Meeting. Laryngological Session at 2.30 P.M. *Papers:* Mr. F. Brayshaw Gilhespy: Chronic Hyperplasia of the Upper Jaw. Mr. Walter G. Howarth: Some Points in the Technique of Largnyo-fissure. Mr. T. B. Layton: The Relation of Nasal Polypi to Inflammation of Accessory Sinuses of the Nose. Mr. Douglas Guthrie and Mr. Norman Dott: On the Occurrence of Brain Tissue in the Nose, the so-called Nasal Glioma.

FRIDAY.—LARYNGOLOGY AND OTOLOGY. Combined Summer Meeting. Otological Session from 10 A.M. to 12.30 P.M. *Papers* on Progressive Middle-ear Deafness, by Dr. Scott Williamson and Mr. E. Horace Richards, Mr. G. J. Jenkins, and Dr. Dan McKenzie. Demonstration: Dr. Graham Hodgson (introduced by Mr. G. J. Jenkins and Mr. F. W. Watkyn-Thomas): Some Radiograms of the Normal and Abnormal Labyrinth. *Paper:* Dr. Dan McKenzie: Posterior (mastoid) Drainage in Acute Suppuration of the Middle Ear. Laryngological Clinical Meeting at 4 P.M. Cases and Specimens will be shown by Mr. W. S. Syme, Mr. Harold Kisch, Mr. T. B. Layton, and others. 8.30 P.M., OPHTHALMOLOGY. (Cases at 8 P.M.). Demonstration: Lieut.-Colonel H. Herbert: Photomicrograph Demonstration of the Anatomy of the Filtration Angle. Annual General Meeting. Election of Officers and Council.

SATURDAY.—LARYNGOLOGY AND OTOLOGY. Combined Summer Meeting (contd.). Otological Session (Clinical Meeting) at 10 A.M. (Cases at 9.30 A.M.) *Paper* (with Cinematograph Demonstration): Dr. Georges Protmann (Bordeaux): The Saccus Endolymphaticus and an Operation for Draining the Same for the Relief of Vertigo. Demonstration: Dr. Albert Gray: Stereoscopic Transparencies of Specimens of the Temporal Bone. Cases and Specimens will be shown by Dr. A. R. Friel, Mr. A. R. Tweedie, Dr. T. B. Jobson, Mr. Norman Barnett, Mr. E. Broughton Barnes, and others.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W. 1.

MONDAY, June 6th, to SATURDAY, June 11th.—FELLOWSHIP OF MEDICINE. Thurs., 3 P.M., Special Clinical demonstration at the Royal Eye Hospital by Mr. T. W. Letchworth. Free to members of the medical profession.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Special course in Gynæcology. Mornings and/or afternoons.—CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd-street, W.C. Afternoon course. Lecture-demonstrations and instruction in the O.P. Department.
Further information from the Secretary.

SOUTH-WEST LONDON MEDICAL SOCIETY: BOLINGBROKE LECTURE.

WEDNESDAY, June 8th.—9 P.M. (in the Bolingbroke Hospital, Bolingbroke Grove, Wandsworth Common, S.W. 11.) Mr. W. McAdam Eccles: The Romance of Fœtal Pathology. Open to any member of the medical profession.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.

THURSDAY, June 9th.—5 P.M., Sir. F. Gowland Hopkins: The Task of Biochemistry (First Croonian Lecture).

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

TUESDAY, June 7th.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, June 9th.—4 P.M., Dr. Donald Paterson: Chronic Appendicitis in Childhood.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, June 7th.—3.15 P.M., Dr. Bruce Williamson: Demonstration of Selected Medical Cases.

INSTITUTE OF PATHOLOGY AND RESEARCH, St. Mary's Hospital, W.

THURSDAY, June 9th.—5 P.M., Prof. B. J. Collingwood: Molecular Movement in the Living Body.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, June 7th—5 P.M., Dr. A. Whitfield: Eczema (2).

THURSDAY.—5 P.M., Dr. S. E. Dore; Mycosis Fungoides.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.

FRIDAY, June 10th.—3.30 P.M. (at the Royal Infirmary), Dr. Barnes: Clinical Cases.

# Appointments.

GRAHAM, D. C., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Selkirk District of the County of Selkirk.

MCKEGGIE, J. W., M.B., Ch.B., D.P.H. Aberd., Medical Officer of Health and School Medical Officer for Bilston.

WILSON, ARTHUR J., M.B., Ch.B. Edin., Honorary Assistant Physician, Coventry, Warwickshire, Hospital.

The General Infirmary at Leeds: RICHARDSON, A., M.B., B.S. Lond., F.R.C.S.Eng., Hon. Surgeon, and CHAMBERLAIN, D., Ch.M. Leeds., F.R.C.S. Eng., Hon. Assistant Surgeon.

# Vacancies.

*For further information refer to the advertisement columns.*

*All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.*—Res. Sen. H.S. At rate of £200. Also Non-Res. Jun. H.S. At rate of £150.
*Ashton-under-Lyne District Infirmary.*—H.S. At rate of £150.
*Barking Town Urban D.C.*—M.O.H., &c. £850.
*Belfast, Mater Infirmorum Hospital.*—Hon. Radiologist.
*Bristol General Hospital.*—Hon. Asst. S. to Ear, Nose and Throat Dept.
*Bristol Royal Infirmary.*—Asst. in Pathological Research on Cancer. £400.
*Burton-on-Trent Infirmary.*—H.S. £150.
*Buxton, Derbyshire, Devonshire Hospital.*—Asst. H.P. £150.
*Cardiff, Welsh National School of Medicine.*—Asst. in Medical Unit.
*Charing Cross Hospital, Strand, W.C.*—Registrar. £100. Also Hon. Anæsthetist.
*Chester Royal Infirmary.*—Third H.S. £150.
*Chiswick General Hospital, W.*—Second Hon. Consulting Surg.
*City of London Hospital for Dis. of Heart and Lungs, Victoria Park, E.*—H.P. At rate of £100.
*Colchester, Severalls Mental Hospital.*—Asst. M.O. £510.
*Durham County Hospital.*—Jun. H.S. At rate of £120.
*East Sussex County Mental Hospital, Hellingly, Sussex.*—Jun. Asst. M.O. £350.
*Elizabeth Garrett Anderson Hospital, Euston-road, N.W.*—Obstetrician.
*Federated Malay States.*—Radiologist. $500–25–800 a month.
*Glasgow Parish Council.*—Supt. of Poor Law Hospitals. £1500.
*Hampstead General and North-West London Hospital, Haverstock-hill, N.W.*—H.S. At rate of £100. Cas. Surg. O. at Out-patient Dept. At rate of £100.
*Herefordshire County Council and Bromyard Urban, &c., District Councils.*—Asst. County M.O. &c. £685.
*Herefordshire County Council and Dore and Webley Rural District Council.*—Asst. County M.O. &c. £685.
*Hospital for Women, Soho-square, W.*—Res. M.O. At rate of £100.
*Liphook, Hants, King George's Sanatorium.*—Asst. M.O. At rate of £200.
*London Hospital, E.—Gynæcological and Obstetric Dept.*—Res. First Asst. £300.
*Manchester City Education Committee.*—Two Asst. Sch. M.O.'s. £600.
*Manchester, Hulme Dispensary.*—Res. M.O. £300.
*Manchester Royal Infirmary.*—Asst. Surg. O to Aural Out-patient Department; two mornings weekly. £35.
*Manchester, Royal Manchester Children's Hosp.*—Sen. M.O. £300.
*Manchester, Salford Royal Hospital.*—H.P., two H.S.'s., and Cas. H.S. Each at rate of £125.
*Miller General Hospital for South-East London, Greenwich-road, S.E.*—Cas. O. £150. H.S. £125. Also Hon. Asst. P.
*North Middlesex Hospital, Edmonton, N.*—Asst. M.O. £100.
*Oldham Royal Infirmary.*—Three H.S.'s. Each at rate of £175.
*Pinewood, Wokingham, Berks.*—Second Asst. M.O. £550.
*Rochdale Infirmary and Dispensary.*—Jun. H.S. £200.
*Royal Army Medical Corps.* Commissions.
*Royal Chest Hospital, City-road, E.C.*—P. to Out-patients.
*Royal Free Hospital, Gray's Inn-road, W.C.*—Res. Anæsthetist.
*St. Giles Hospital, Brunswick-square, S.E.*—Asst. M.O. £7 7s. weekly.
*St. John's Hospital, Lewisham, S.E.*—Res. Cas. O. At rate of £100.

*St. Peter's Hospital for Stone, &c., Henrietta-street, Covent-garden, W.C.*—Clin. Assts.
*Seamen's Hospital Society, Dreadnought Hospital, Greenwich.*—Anæsthetist. 50 guineas. Also H.P. and H.S. At rate of £110.
*Sheffield Royal Infirmary.*—H.S. At rate of £80.
*Stafford, Staffordshire General Infirmary.*—H.S. At rate of £200.
*Southampton County (Mental Deficiency Act, 1913).*—Med. Adviser. £700.
*University College Hospital, Gower-street, W.C.*—Surg. Reg. £250.
*University of London.*—University Chair of Pathology. £1000. External Examinerships. Also Laura De Saliceto Studentship. £150.
*Victoria Hospital for Children, Tite-street, Chelsea, S.W.*—Sen. Res. M.O. £250.
*Warwickshire, King Edward VII. Memorial Sanatorium, Hertford Hill, near Warwick.*—Asst. Res. M.O. £350.
*West London Hospital, Hammersmith-road, W.*—H.P. and H.S. Each at rate of £100.
*Willesden General Hospital, Harlesden-road, N.W.*—Hon. Surg. to Ear, Nose, and Throat Dept. Also Clin. Assts. to Out-patients.
*Wolverhampton and Staffordshire Hospital.*—H.S. At rate of £150. Res. Surg. O. £250
*Worksop, Victoria Hospital.*—H.S. At rate of £170.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Cottingham, Northamptonshire.

# Births, Marriages, and Deaths.

## BIRTHS.

AINSCOW.—On May 22nd, at Hagley-road, Birmingham, the wife of Dr. J. Arthur Ainscow, of a daughter.

CANNING.—On May 26th, the wife of Dr. H. G. R. Canning, of Wimpole-street, of a son.

OSBORNE.—On May 26th, at Ciola, Watford, the wife of Denis C. Osborne, M.B., Ch.B., of a son.

SMITH.—On May 27th, at 5, Cavendish-terrace, Stanwix, Carlisle, to Gwendoline (née Chave), wife of Dr. J. N. Douglas Smith—a son.

WILSON.—On May 13th, at Bushey Heath, the wife of Dr. E. A. Wilson, of a son.

## MARRIAGES.

HODGES—LEGG.—On May 26th, at St. Mary Madgalene, South Bersted, Bognor, Lt.-Col. Aubrey D. P. Hodges, C.M.G., M.D., late P.M.O., of Uganda Protectorate, to Hilda Margaret, youngest daughter of the late Rev. F. S. Legg, M.A., formerly vicar of Christ Church, Mitcham, and late rector of Alfold, Surrey.

## DEATHS.

BRODRIBB.—On May 27th, at The Field, Penmaenmawr, N. Wales, Charles Hildred Brodribb, M.B., B.S., Major, I.M.S. (retd.).

COFFIN.—On May 27th, at Carlton-vale, N.W., Richard James Maitland Coffin, F.R.C.P., Hon. Assoc. Order of St. John of Jerusalem, Major (late R.A.M.C. T.), in his 85th year.

GIBBS.—On May 21st, at Caple-gardens, St. Leonards-on-Sea, suddenly, Herbert J. Gibbs, M.R.C.S., L.R.C.P. Lond. (late Medical Service, Singapore), aged 64.

GLENDINING.—On May 19th, at Aspley Guise, Bedfordshire, Bryden Glendining, F.R.C.S.

GRIFFITH.—On May 21st, at the Caernarvon Cottage Hospital, following an operation, Richard Griffith, M.R.C.S., J.P., late Major, 6th R.W.F., Lieut.-Colonel, R.A.M.C., of Penclogwyn, Portmadock, aged 53.

LACY.—On May 19th, at Saumerez, Sunninghill, Alexander Gairdner Lacy, M.D.

ROBINSON.—On May 25th, 1927, at 45B, Golders Green-road, N.W. 11, Isabel Kate, aged 72, widow of Dr. Arthur H. Robinson, of St. Mary's Infirmary, Highgate-hill.

SMITH.—On May 24th, at Bandrum, Carnock, Fife, James Burnett Smith, M.B., C.M. Edin., in his 70th year.

TAY.—On May 15th, at Lyndhurst, Oakhill-road, Croydon, Waren Tay, F.R.C.S., in his 84th year.

*N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

OSTEOPATHS AND THE MEDICAL ACT.—In an annotation in THE LANCET last week (May 28th, p. 1143) it was stated that the deputy county court judge sitting at Marylebone had made a certain decision dealing with the right of an osteopath to recover fees. We are reminded that the case was not, in fact, heard at Marylebone, but by the deputy county court judge sitting at Bloomsbury, as was stated in the report published in THE LANCET of March 5th (p. 510).

# Notes, Comments, and Abstracts.

## MEDICAL RELIEF IN RURAL INDIA.

*(Being part of a Report to the Government of Bombay.)*

BY MAJOR-GENERAL ALFRED HOOTON, C.I.E., M.R.C.S.,
ACTING DIRECTOR-GENERAL, INDIAN MEDICAL SERVICE.

THE demand for medical aid in rural areas is becoming more and more insistent. The regular practitioners, fully qualified on modern scientific lines, are too expensive to be multiplied indefinitely for country work, and Government and the local authorities can only hope to keep a moderate number of them established in institutions, designed primarily to serve the poorer population of comparatively large centres and to deal with Government and municipal duties. Apart from these, it is evident that some less expensive agency must be found for the villages and rural areas in general.

Broadly speaking, the alternatives to the regular practitioners are the vaid or hakim, who in many cases is already available on the spot, and the possibility of creating some inferior class of whole-time or part-time practitioner, trained, in however elementary a manner, on modern scientific lines. The question of choice is a most important one, involving as it does the future medical progress of India, and it is worth while to consider carefully the arguments for and against each alternative before committing ourselves to steps which it would be difficult or even perhaps impossible to retrace.

### *The Indigenous Systems of Medicine.*

The attempts which have occasionally been made to brush aside the Ayurvedic and Unani systems of medicine with contempt may be at once rejected. The former, at all events, can claim some of the most eminent pioneers of the profession, and it is certain that 500 years ago both the Hindu and Mohammedan physicians must have been greatly superior in many respects to those of Europe. The names of Charaka and Sushruta may fairly be placed beside those of Hippocrates and the other ancient Greek physicians, and in point of time they preceded them. The Ayurvedic school laid the foundations of modern anatomy, physiology, and pathology, and also discovered many useful drugs.

But though the researches of the practitioners of the ancient Indian systems were most enterprising and praiseworthy, considering the conditions under which they were made, the absence of modern facilities led them into many errors. Thus, although the vaids dissected bodies, it was by such crude methods that they confused arteries with tendons, and tendons with nerves, and although they recognised and described the main organs they had no accurate knowledge of their functions. The theory of pathology which they evolved was merely speculative, and it is only by an entirely unjustifiable stretch of the imagination that the humours—*vat* (wind), *pitta* (bile), and *kapha* (phlegm)—can be made to fit into any reasonable scheme of modern pathology. The remedies they employed, moreover, were on an entirely empirical footing, and the doses were not properly worked out, so that when powerful drugs were used considerable risks of over-dosage were often run. At the present day it is not uncommon to come across instances of such dangers. Mercury is perhaps the most familiar example, and cases of necrosis and sometimes total loss of the lower jaw from excessive doses administered by practitioners of the indigenous systems are only too frequent. Arsenic is also given by them, and gastro-intestinal irritation from its improper use is not unknown. Inability to recognise conditions under which certain drugs cannot safely be administered is also a frequent cause of danger for men who have had no regular scientific training, and two cases may be quoted which appeared in the press last year: one, presumably of intestinal obstruction, in which a large dose of croton oil was given improperly by a kahim, and another of asthma, in which some unknown drug was administered. In both death was reported to have followed almost immediately. It has also to be added that practitioners of the indigenous systems keep their remedies secret, when they are able to do so, thus making research difficult and limiting the spread of knowledge.

### *Modern Scientific Medicine.*

The system of medicine commonly spoken of as Western Medical Science is not a product of purely European growth. Like astronomy and some other sciences it had its origin, not in the West, but in the East, and it is the result of the impact of modern scientific thought—mainly, no doubt, a Western development—on the ancient knowledge. At the present time the modern system incorporates many of

the old Indian remedies, and it is easy to substantiate the contention of the advocates of the indigenous systems that methods of treatment which have been hailed as new discoveries of the modern school have had their counterparts in the East long ages ago. Various developments of hydrotherapy and the deprivation of salt in dropsy may be quoted as instances of this in medicine, and light splinting and the early movement of fractures in surgery. Modern scientific medicine should therefore not be regarded with hostility as a stranger in India, but welcomed as a younger branch of the same family. The ancient wisdom has returned, reinforced by new ideas and discoveries which make it many times more valuable. Accurate dissection has taken the place of scraping a decaying body with twigs, and founded the modern science of anatomy; careful experiments have placed the science of physiology on a sound basis, and enabled us to ascertain the functions of the principal organs; post-mortem examinations and other scientific methods of research have taught us a great deal about disease; and medicine and surgery, apart from advances within their own bounds, have profited enormously from all these basic sciences as well. At the present day modern medicine and surgery are probably as highly appreciated in the East as in the West by those who are in a position to judge for themselves and to command the services of the best practitioners. The difficulty has always been to make them available for the poorer people in rural areas.

*The Alternatives.*

There are, as above noted, three main ways in which medical aid may be provided in rural district—the perpetuation and extension of one or more of the indigenous systems, the creation of a special class, trained in elementary medicine on modern scientific lines (like the inferior veterinary assistants who used to be known as salutaris), or the employment of some permanent Government servants, such as the primary schoolmasters, also trained on modern lines, on a part-time basis.

The first of these alternatives, the utilisation of the vaids and hakims, is at first sight attractive, and has been carefully considered. It has, however, serious objections, some of which have already been referred to, and on further discussion it was found that these objections were realised fully by many advanced Indian thinkers. A very distinguished Hindu social reformer, to whom the question was referred, was strongly opposed to the proposal, and only one member of a small conference of Indian gentlemen specially interested in such subjects spoke in favour of the proposition to revive the indigenous systems for rural work. The difficulty of training at once arises. If the vaids and hakims are to be used, are they to be trained in Eastern or Western methods or both? At the present day to restrict treatment to the methods of the indigenous systems in the light of all the advances of the nineteenth century would be unthinkable, and to call the practitioners Ayurvedic and let them work on a basis of modern science would not be fair or honest.

*The Proper Point of View.*

This question has hitherto, unfortunately, been considered and debated more on political, racial, and even religious lines than on its merits. The experience of Japan in this connexion is very instructive. As everyone knows, that country was at first violently opposed to all Western innovations, and medicine was no exception to the general rule. It is even recorded that in the sixteenth century many Portuguese and native medical men practising the Western system—such as it was in those days—were put to death. As late as the eighteenth century, indeed, the Japanese believed that the viscera of the European barbarians were transposed—i.e., that instead of being in the position affected by all good Japanese, their livers were on the left side and their hearts on the right, and it was only in that century, when the first post-mortem examinations were made on European lines, that this erroneous impression was corrected. From that time onwards, however, all seems to have gone well. The existing system, a branch of ancient learning originally imported from China, and no doubt very respectable though hopelessly antiquated, was gradually displaced and modern scientific medicine adopted, until now Japan can boast 27 medical schools (18 of university standing) and Kitasato and Shiga are listened to with respect and admiration throughout the civilised world. As regards the ancient Chinese system, it was recently stated by a distinguished Japanese official that it has almost expired, and that only in the most remote places are practitioners other than those of the modern school to be found in Japan.

*A Scheme in Being.*

Proposals were put up to Government in 1923 for an experimental trial of primary schoolmasters for elementary medical and surgical aid in villages. Thirty of these men are at present at work in selected villages in the districts of Poona, Bijapur, Sholapur, and Dharwar. The scheme is shortly as follows. Selected primary schoolmasters are posted for a period of training of two and a half months to civil hospitals where special arrangements are made for them. The men are taught elementary anatomy and physiology as in ambulance classes, and given practical first-aid instruction in medicine and surgery. They work in the wards and out-patient department, and the course is made as practical as possible. At the end of it they are expected to be able to dress wounds and ulcers, to treat sore eyes, and to recognise and treat with simple remedies some of the more important diseases. They are also taught elementary hygiene (ventilation, safeguarding of water-supply, prevention of malaria, &c.). Training is, of course, carried out in the appropriate vernaculars. The cost of training works out at about Rs.72 for each man. The equipment (village aid cabinet) costs Rs.250, and the upkeep of one aid-post comes to Rs.300 per annum inclusive. The scheme is therefore very economical.

It has proved successful, and the Upacharaks, as they are called, are now in great request wherever they are stationed. In Bijapur, particularly, their work has met with cordial recognition from official and non-official observers, and the village officers and villagers in general are almost unanimously in favour of its extension. Requests are frequently received from villages which have no Upacharaks for aid-posts to be established. A general review of eight months' work, from June 1st, 1925, to Jan. 31st, 1926, was taken in the Bijapur district, and the following remarks apply to the ten centres now in operation there. In these ten centres, during the eight months, 31,122 cases were treated. These included malaria, dysentery and diarrhœa, eye diseases, skin diseases, wounds and ulcers, and many other affections. Very favourable reports were received from the collector, the assistant collector, the president of the district local board, and the civil surgeon, amongst others. Equally good accounts have come from Poona, the other district in which the Upacharaks were early established, and it is hoped that a combined report on the whole scheme will shortly be available.

*Investigation and Utilisation of Indian Drugs.*

Government has recognised the desirability of investigating such Indian drugs as have not hitherto been incorporated in the regular pharmacopœias, where reasonable grounds exist for believing that they are worth examination, and the pharmacological unit of the Haffkine Institute has for some time past been engaged in research work of this description. It is also realised that some Ayurvedic and other indigenous remedies, the qualities and proper doses of which are well known, may usefully be incorporated in the village aid cabinets. As time goes on no doubt these may be added to.

*Conclusions.*

1. The Ayurvedic and some other indigenous systems did very good work in their day, but they are based on erroneous theories, and cannot bear comparison with the modern system of medicine founded on recent advances in science. The remedies are largely secret, and there has been no proper investigation of their active principles or standardisation of dosage.

2. As regards the regular practitioners of modern scientific medicine and surgery, it is generally admitted that they are superior to any others. Where they cannot be provided—chiefly for reasons of expense—it is desirable to establish some inferior class of practitioner, and for moderate-sized villages these may be on a part-time footing. It has been shown that primary schoolmasters can be very useful in this capacity at a moderate cost.

3. To revert to any other ancient systems of medicine would be a very retrograde step. They are not founded on scientific principles, and are entirely out-classed by modern scientific medicine. It is admitted that any revival of the ancient systems must be largely dependent on the assimilation of scientific knowledge. Ayurvedic medicine, on these lines, would be Ayurvedic only in name, and any such scheme would be an unworthy subterfuge.

4. Apart from a revival of the Ayurvedic or other indigenous systems as such, every effort is being made to investigate Indian drugs, and these should be utilised whenever it appears desirable to do so.

## A MISUSE OF BUSINESS METHODS.

WE have received from the holder of a municipal post as bacteriologist and pathologist a copy of a circular which had been sent to him from an institute of pathology connected with a metropolitan hospital. The terms of the circular are not fortunate. Addressing our correspondent as a general practitioner, while he does not happen to be in practice, the circular credits him with having already requested the institute for "an outfit for clinical material for examination." This request was never made. The circular appears to have been based on what in trade circles is known as a "follow-up letter." More circumspection should be employed at the institute.

# INCORPORATED ASSOCIATION OF HOSPITAL OFFICERS.

## FOURTH ANNUAL CONGRESS.

THE Congress, held at the Royal Horticultural Hall, was opened at 10.30 A.M. on May 27th by Sir ARTHUR STANLEY, the President. The morning session was given up to a discussion on Hospital Policy with particular reference to the Raising of Funds, introduced by Mr. WALTER KEWLEY, House Governor of the Middlesex Hospital. In the afternoon Viscount HAMBLEDEN took the chair, when Prof. BERESFORD PITE, F.R.I.B.A., read a paper on

### HOSPITAL PLANNING AND CONSTRUCTION.

It was, he said, probably the ideal of hospital officers that English hospitals should become standardised. The governing principle in England was the restoration of the patient's health, and every part of the building, together with light, air, food, and drainage was designed to that end. The most recently completed English hospitals showed how the essential factors had been harmonised to create a perfected type, capable of variation only in the equipment of the service rooms, baths, stores, &c., and in their connexion with the main arteries of administration.

The practice of building sanitary annexes in isolated towers was being discarded on account of expense, and they were tending to become more accessible and more spacious. The "cut-out" system of ventilation, which placed entire reliance on natural light and air, was unlikely to be improved upon. It was peculiarly suited to the windy, changeable English climate with its small temperature range.

#### *Foreign and English Practice.*

In America, where the temperature varied from great heat to great cold, and where the population were sensitive to draughts, open disconnecting lobbies and corridors were generally avoided. For natural ventilation was substituted a complicated system of mechanical draught and exhaust ducts. These, although they worked well, were difficult to clean and the machinery was expensive. The arrangement would not appeal to the English architect, nor suit the English climate; conversely the English plan would be unsuited to the requirements of the States. On the Continent, no standard had yet been reached, and experiments, with necessarily a certain amount of serious loss, were still being made. Europe was still divided between the corridor and pavilion types of plan. In the very big modern German hospitals the detached pavilion was planned with the "large camp" idea. Here architectural arrangement imposes, with its long corridors, a certain amount of tyranny over the administrative service.

The best English hospitals, said Prof. Pite, showed no trace of the influence of scholastic or classical architecture. Practical devotion to purpose was the manifest aim of the architect, and the seal of his success. He had ample scope for his ideals of beauty in serving the dignity and essential aim of the building upon which he worked. Our "standard" design was still insular. Neither the Continental corridor plan, with its series of rooms arranged on either side of a dignified passage, nor the avowed picturesqueness of modern Scandinavian hospitals, nor the stately platoons of partitions in the Teutonic building, expressed to us the ultimate perfection.

#### *The Outlook of the Patient: A Suggestion.*

The normal plan of a ward, by placing a window between each bed for cross-ventilation, made every patient face the light and gave him only the foot of the opposite bed for scenery. Prof. Pite suggested that a line of framed screens about 6 feet high and 18 inches clear of the floor should be placed down the centre line of each ward. The patient would then be relieved of the light opposite, and would live in surroundings more like those of a normal bedroom, especially if the screens were tinted in a quiet colour and decorated with an occasional picture, or fitted with shelves for vases of flowers. This would make for privacy and variety alike, and would in no way hinder ventilation, supervision, or service. Mounted on rubber-tyred castors, the screens could easily be moved for floor-cleaning, or transported from room to room. To give the patient a little more variety of outlook than he had at present, the speaker suggested arranging beds up and down the wards instead of across them. Circular or semi-circular wards, though perhaps not very economical nor easy to adapt to a site, were considered by some authorities more cheerful for the patients and more convenient for clinical purposes.

#### *Lifts.*

The introduction of the lift was the most radical of all architectural developments; it had revolutionised the plans of civil and domestic architecture. Without it the high buildings of the New World would be impossible. In England, however, where more ground was still available, it had done no more than facilitate the working of the standardised plan, and had not fundamentally changed it, any more than had the speaking-tube. Nevertheless, it might yet exert great influence. As long ago as 1903, the late Sir John MacAlister had advocated vertical planning as the solution of many difficulties in the expansion of intra-mural hospitals. The patrons would no longer have to seek wide extra-mural sites, and the wards would be raised above the gases of the town into purer air. Sir John MacAlister had conceived the slogan of a "tower of healing" before the American upward movement had been recognised as more than an advertising scheme. Vertical planning would reduce space and distance without sacrificing any of the achieved results of the standard. The one thing necessary was a strengthened faith in the elevator, both in principle and in operation. We ran expensive risks in other departments of hospital equipment, and our "conservative nervousness" was happily tending towards progress in this direction also. Prof. Pite concluded by summarising the spirit of modern hospital design as an alert conservatism founded on experience but with an extending reach towards progress.

#### *Discussion.*

Mr. A. GRIFFITHS (Secretary, East Suffolk and Ipswich Hospital) praised the Voluntary Hospitals Commission for laying down valuable lines for the guidance of bodies building small hospitals capable of adaptation to small purposes. He said that it was no good adapting an existing building to serve as a hospital; such buildings were a burden to the communities they served. Testators sometimes tied their bequests up to such buildings: they would do more good if they left a field and a sum of money and allowed the architect and hospital manager to build according to need. Of the essentials of a hospital the wards were the least important. They might be replaced in ten years, but the vital things were site, drainage, water-supply, the administrative block, central heating, &c. Yet it was possible to raise money from the generous public for wards and not for the other things. Here education was needed. The psychological value of trees, flowers, and beautiful surroundings was very great, and should be considered in laying out a hospital. Since the war, however, the fresh-air craze had largely abated. Fresh air was a good thing, but a little warmth, comfort, and convenience in working were equally important. Convalescent homes (again the speaker acknowledged the services of the Hospitals Commission) should be planned as hospitals.

Colonel H. HUNTER (Bristol Homœopathic Hospital) recorded the success of the screen idea as put into practice at two Bristol hospitals. His governing body had made the experiment of fitting a hot-air circulating apparatus. This had been a great improvement, as the warmth could be regulated and the radiators and dust-collecting fireplaces eliminated. It was, however, rather costly. His authorities had appreciated the value of beautiful surroundings to the extent of spending £11,000 on laying out a garden.

Mr. A. B. KEAY (Glasgow Ear, Eye and Nose Hospital) pleaded for better provision for the recreation of the nurses and general staffs, and gave instances of newer hospitals that had met the need for dancing, badminton, &c.

Mr. F. A. LYON (Seamen's Hospital, Greenwich) told how a small plot of waste ground at the Albert Docks had been converted into hard tennis courts for the staffs of two Greenwich hospitals.

Mr. MCGOWAN (Chairman, Whitehaven Hospital) asked for members' experiences with wireless installations.

Mr. W. RICHARDSON (London Hospital) asked whether the lecturer, in designing the semicircular hospital, took into consideration economy and convenience of administration, which it was difficult to combine with medical requirements.

Mr. J. GIBSON (Sunderland Royal Infirmary) spoke of the difficulty of regulating the temperature in temporary buildings, and of the delight of patients in being transferred from the æsthetic surroundings of a hospital to the domestic atmosphere of a convalescent home.

Mr. E. W. JOHNSTON (King's College Hospital) pleaded, as an engineer, for space in the design to admit the laying down of ducts for electrical and steam power, so that these could be led to any point where they might be needed. X rays had been brought to the bedside of the patient; in the future it was likely that other apparatus would be required in the wards, and it was important to make structural provision for that future. Power channels in a hospital were as important as blood-vessels in the body.

Mr. WILLIAM PITE, F.R.I.B.A., deprecated the introduction of the American tower hospital with its plenum ventilation.

Mr. S. R. LAMB (Liverpool Voluntary Hospitals' Council) suggested that to deprive neighbours of fresh air by constructing high hospital buildings was to defeat the end of that building. He asked whether the St. Andrew's Cross

construction did not depend for its efficacy on being surrounded by open country, and whether the money difficulties of service and supply that hindered the development of the excellent "bungalow" system could not be overcome. It was a mistake to build wards too permanently.

The CHAIRMAN spoke with appreciation of the collaboration of medical men on hospital boards. The ultra-permanent American Hospital had its drawbacks, for it was too difficult to alter if necessary. The difficulty of the semi-permanent type was that it required a very large site and was extravagant in time and labour. Auxiliary services were outgrowing the hospitals in which their accommodation had originally been ample; he pleaded for the centralisation of sunlight, X ray, and electrical departments in new buildings. He predicted a great future for lifts. American devices must, however, save labour, and must carry a fair constant load to pay for their keep. Most large London hospitals had wireless, and the rule here was, "Avoid loud-speakers like the plague." A pair of ear phones should be fitted at each bedside.

Prof. PITE, in his reply, said that ducts were necessary evils. Hospitals must be planned with them, but their use should be avoided wherever possible. Infection got pumped well into them and was then next to impossible to remove. Machinery should not be made the permanent feature of the building; it was the most transitory factor of all. Pipe-heating might have to be superseded by plate-heating, for instance, and then the expense was enormous. The only permanent part of the building was the walls. Nurses' recreation quarters, he thought, should be right away from the hospital. The circular corridor was shorter, and saved labour.

### THE EXHIBITION.

A Hospitals and Institutions Exhibition, opened on May 20th by H.R.H. Princess ARTHUR OF CONNAUGHT, proved of interest and use to those concerned with the equipment and construction of the modern hospital; every department was represented in the collection of exhibits and a good idea could be formed of the standard reached in labour-saving appliances and new materials.

The operating theatre equipped by Messrs. Allen and Hanbury had a fine operating table with "Monel" metal top. "Monel" metal is much used in American hospitals and is excellent for kitchen work as well as for sterilising drums and the like; it wears well, though it becomes duller with use and should have a future in this country unless the cost is too high. The instruments shown were all of rustless steel; door-handles, fittings and taps of this metal retain their smart appearance without the labour of constant polishing. The illumination of the table was of the "Holophane Circuit Type" in which several lights are concentrated on the field of operation, a type which is also common in America, though not possessing the flexibility of such fittings as the "Scialytic." The rubber floor was pleasant to walk on, but the perfect jointless flooring is still to be found. The "Decolite" floor shown by Bell's United Asbestos Company has advantages of its own, and the imitation marble, "Calbonite," of the same firm, may prove useful for dadoes.

The kitchen equipment department was fully represented, one of the most interesting exhibits being Benham and Sons' insulated food trolley, constructed on the principle of a thermos flask with containers for hot and cold food, the top in "Monel" metal and the sides in aluminium (a material which, unfortunately, has defects as well as merits). The dish-washing machines much used in America are evidently finding their way into this country, and two good types were shown—the "Victor" dish-washing machine and the "Crescent" where dishes are packed in trays and subjected to rinsing and disinfecting by jets of boiling water. Many other labour-saving machines were shown, such as the "Hobart" mixer (whose merits are well known) and the electric potato peeler by Mabbott and Co.

The question of heating, especially of private wards, is much debated at the present time and the merits of gas and electricity were both well set out, the former by the Gas Light and Coke Company, who showed illustrations of the work carried out at Westminster Hospital, and the latter by the "Electro-Vapour" radiators, which have been proved convenient in operating theatres, as for instance at the Hereford General Hospital. The "flush hospital" door which is more than ever used in up-to-date hospitals, was represented by a type made by Ripper, Ltd., of Castle Hedingham, where a sound-resisting material, "Celotex," is used inside the framing.

A collection of hospital plans would have been in place at the exhibition, but the plans of the Seamen's Hospital at Tilbury, by Messrs. Collcutt and Hamp, though a very good and well-designed example, were the only exhibit of this kind. The omission of the sanitary tower in the ward plan shows the post-war tendency to dispense with the cross-ventilated lobby which used to be considered an essential.

## THE MEDICAL WOMEN'S FEDERATION.

THE half-yearly meeting of the council was held at Manchester from May 12th to 14th, the President, Dr. Christine Murrell, in the chair.

A pamphlet prepared by the Venereal Diseases Standing Committee, dealing with the duty of the State in the control of venereal diseases, was referred to the local associations for consideration. Appreciation was expressed of the work of the League of Nations in their report on the traffic in women and children, and a resolution was passed welcoming the appearance of the report and expressing the hope that the Committee of the League would continue its investigations from the health point of view, since the Federation was convinced that such investigation would demonstrate the medical futility of the whole regulation system. A further resolution was passed recording the unshaken belief of the Council that the non-compulsory system of attempting to eliminate venereal disease in force in Great Britain and Holland has produced, and promises to produce, the best results, and protesting against any attempt to graft on to it any form of compulsion or to reintroduce the hurtful association of venereal disease with the police.

The Standing Committee for the Defence of Married Medical Women reported that a meeting had been held to consider what steps might be taken to support the proposed Married Women's (Employment) Bill. The proposal to get up a petition to Parliament had been abandoned in view of the shortness of time, but many individual letters to Members of Parliament had been written.

The Menopause Subcommittee reported that two questionnaires designed to carry out an investigation on a wide scale into the phenomena of the menopause had been widely circulated.

The question of underpaid posts was dealt with in the report of the Standing Committee on Public Health. To aid in dissuading women from accepting black-listed posts, a pamphlet was passed by the Council for distribution to newly-qualified medical women and D.P.H. students, and to deans and secretaries of medical schools. Cases of underpaid posts applied for or accepted by medical women during the last six months were reported. Where their names could be obtained, candidates had been approached; several of them showed great public spirit and retired. The Council noted that no member of the Federation was among those who accepted these posts.

A new Standing Committee on Psychological Medicine was formed, and reports were received of the work of various funds administered by the Federation.

## THE AMATEUR GOLF CHAMPION.

FOR the second time in the history of the amateur golf championship the honour has been won by a medical man. Dr. William Tweddell, who is a native of Durham, spent his early years in Yorkshire where he first learnt to play golf, showing considerable promise while still a boy. During his years of service in the war he had little opportunity for practice, but when in 1919 he entered the University of Aberdeen as a medical student his golfing prowess soon became evident. He was a member of Murcar Golf Club, Aberdeen, and played in the University team. Dr. Tweddell qualified in 1924 and after holding resident posts at the Royal Infirmary, Aberdeen, and in Manchester, he settled in practice at Stourbridge. His success is no surprise to those who have watched his progress and will give great satisfaction to all members of his old university. We offer him cordial congratulations.

## BLOOD TRANSFUSION FOR BRONCHIAL ASTHMA.

SINCE anaphylaxis, malnutrition, and anæmia may all be factors in the ætiology of asthma, transfusion of whole blood might reasonably be expected to have therapeutic value. The anæmia would, of course, be relieved directly or by stimulation of the blood-forming organs, and it is possible that sensitisation to proteins might be changed. Dr. W. T. McBroom has recently recorded [1] a series of five cases treated by direct syringe transfusion. He found that the asthmatic attacks ceased immediately in four of the cases, whilst in the fifth they were reduced in frequency and intensity. In addition to the direct relief the general health improved and the weight increased. The three younger patients had failed to respond to all other methods of treatment; the older ones had had asthma of long standing, and the resulting emphysema and embarrassment of the right heart could not be removed by transfusion. It must be remembered, however, that patients with asthma are apt to improve for a time on any régime or after any operation that impresses them sufficiently, and Dr. McBroom's five cases are insufficient support for the conclusion that transfusion is a useful specific treatment for bronchial asthma—a conclusion which would conflict with the experimental results of other workers.

[1] Canadian Medical Association Journal, April 4th.